COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER AND R. DAWSON HALL, *Editors*.

Volume 20 NEW YORK, THURSDAY, DECEMBER 22, 1921 Number 25

Judge Anderson's Judicial Errors Not Without Their Benefit

HIGHLY technical is the characterization applied to the opinion handed down last week by the Circuit Court of Appeals in Chicago on Judge Anderson's famous injunction against the check-off. The outcome, however, plainly enough is an upsetting of Judge Anderson's theory and contention and a reversal for those who expected thus to be relieved without more ado of the burden of the check-off. For the Borderland Coal Corporation and the non-union operators the victory may not prove to be empty; time alone and the final decree of the Indianapolis court, to which the plea is again remanded for hearing, will tell.

So broad and sweeping was the original decree and so far does it appear that Judge Anderson overstepped "the limitations of the case and his own jurisdiction," that all hope of settling the question of the check-off by court processes is now behind us. It is true there remains the indictment under the Sherman law of 226 coal operators, miners and others, in which the check-off practice is under fire, but so many other matters are involved in this case and the time of its trial and settlement are so remote as not to figure in present counsels.

The check-off is illegal, it appears, only when the money collected thereby is put to illegal use. That Judge Anderson had decided otherwise caused wonderment among the laity in no way connected with the coal industry and not smarting under the evils of the practice. We find among those who wholeheartedly sympathize with the opposition of coal operators to the check-off a disposition to regard the decision of the Chicago court as reasonable and to have been expected. The sentiment of such observers is that the check-off should go but that it must be removed by another route, although perhaps on the same basis of reasoning.

Hence, unless the unexpected occurs, the check-off will be an issue in the wage negotiations early next spring. The few days that intervened between the original decree of Judge Anderson and the stay of judgment by the Chicago court afforded striking evidence of the temper of the coal operators with respect to the time-dishonored practice of the check-off. Indiana, of course, being indisputably within the jurisdiction of the Indianapolis court, would have obeyed. Illinois, wavering between the Indianapolis decree and that of a state court running counter to it, gave evidence of a desire to be purged of the check-off. Ohio, Pittsburgh and central Pennsylvania decided to accept the competency and obey the injunction of the Indianapolis court. The check-off was slated to go. Whether it can be overthrown in the next scale meetings remains to be seen. So tenaciously will the union cling to this—to them—life-giving privilege, that he who elects to oppose it faces a severe trial of force.

We stand with those who believe the check-off of today must be abolished in the interest of truly representative unionism and the good name of the coal industry. The judicial errors of Judge Anderson have not been without advantage in centering thought and opinion on the check-off.

Wherein Lies the Greater Opportunity?

WHO will eventually own the coal mines—the consumers or the purchasers? Wherein lies the greater opportunity for profit—in operating coal mines or in selling coal? Or is the real chance for wealth from coal in the holding of the resource, the coal land? The past five or six years have chronicled a definite movement of the control of coal production to the consumer. To understand this development it is only necessary to recognize coal as a raw material for industry. If the finished product be iron and steel, then the producer inherently turns to ownership of ore-bearing lands and iron mines, coal lands and coal mines, limestone and dolomite quarries, coke ovens and even railroads. The Steel Corporation is a typical large example of vertical combine, being essentially self-contained as regards reserves and producing units for all raw materials entering into its final products. The second largest steel company, the Bethlehem, now owns coal mines to supply its normal requirements. Other steel companies own mines sufficient to supply all or large portions of their requirements for byproduct, gas and steam coal.

Railroads likewise, particularly in the West and Middle West, are owners and operators of coal mines for engine fuel. In some instances, as in Illinois, the railroads have long-time cost-plus contracts for entire mine outputs, which has the same effect on the commercial demand as if owned outright by the consumer. Some industrials which are large coal consumers, as the Semet-Solvay, own and operate many coal mines. Henry Ford mines the coal he burns as well as other raw materials used in his manufacturing establishments.

Public utilities are fast entering the field as owners and operators of coal mines. Fuel is the one important raw material for the production of steam-generated electric power and many central-station operators are numbered among the coal operators. The plant and equipment of one of the newest and largest of these is described at length in this week's issue. A mine plant has here been designed under the ideal condition of a uniform and predetermined output definitely assured. Operating conditions are likewise ideal, for "car shortage" has been eliminated as a factor limiting production and "no-market" losses are reduced to the minimum.

It may be assumed that with these advantages and the best and latest equipment, both above and below ground, the cost of production will be correspondingly low. The company operating the coal mine in this instance is separate but subsidiary to the power company

and it follows as a matter of good business that the coal will be carried on the books of both to show a profit for the producing unit. But, lacking selling expense and with inherently low cost, it may well be that the coal company will be enabled to sell the power company at a figure that will make it difficult for other power companies without coal properties to compete, which circumstance will promote the acquisition of coal mines by the other public utilities. Thus is the unregulated coal industry in process of absorption by the highly regulated public utility. Even the retailer is becoming coal producer, it having been announced recently that the largest coal dealer in New York City is now part owner of an anthracite producing company.

It may not be far from the mark to say that the commercial coal business of this country has not increased materially in recent years; that the greatest increments to consumptive capacity have been and are being supplied by the development of new mines or the purchase of old mines by the consumer.

The corollary, of course, is for the coal producer to be owner of the business or industry that consumes his coal. One nationally known coal operator is a director in many of the enterprises to which he sells coal. Not a few producers and wholesalers have retail coal yards to facilitate the distribution of their product. Another producer of coal is partner in a byproduct coke oven enterprise that takes part of his coal output.

Because of the widespread use of coal there is no possibility of the commercial coal industry ever being wholly absorbed by the user, but there are several consequences of even partial control that are worthy of note. The industrially owned mine need not fight for a market; cost of production is something to be absorbed in the selling price of the final product. Therefore the incentive is to maintain continuous operation. Strikes are to be avoided. There is lacking the outside pressure for lower costs through lower wages. The next step after an industrial acquires a coal mine is to buy coal cars, and it has been the general experience that private coal cars receive a preference in handling—are given an advantage on the rails.

On the other hand, at the industrial mines we are apt to find the mining practice giving the highest recovery of coal from the ground. A commercial operator, beset by keen competition, gets his coal in the cheapest manner, but the industrial coal operator can and does afford the practice in mining that comes nearest to taking 100 per cent of the deposit.

A Promise in Fulfillment

TO BE invited to Washington and to have support in high places, to be admitted into the common counsel of business and government, is an experience until last week denied the heckled coal operators since the days of Secretary Lane and of Dr. Garfield.

The occasion was a meeting called to find a way to effect a cut in freight rates on coal to tidewater for export, in a last desperate effort to save the remains of our foreign business. Week by week for three or more months the volume of cargo coal for offshore has been dwindling, in part because abroad, as here, consumption of coal and demand are low, but largely because Great Britain has been underbidding us.

Shipments on a contract for gas coal in Italy obtained for this country were hardly under way when suddenly stopped by a series of incidents abroad and cabled excuses. The world spot market is as enticing to buyers one place as another and English coal at some $2 less per ton delivered has been substituted for the American. Factors supplying bunker stations in the West Indies—business that belongs here as much as that of the Channel Islands does to England—have told the government that English shippers are in a way to supplant American coal at our front door. In fact, a dramatic climax, as it were, in the tragedy of our ailing export trade was the recent delivery in our seaports, both Pacific and Atlantic, of coal from Great Britain.

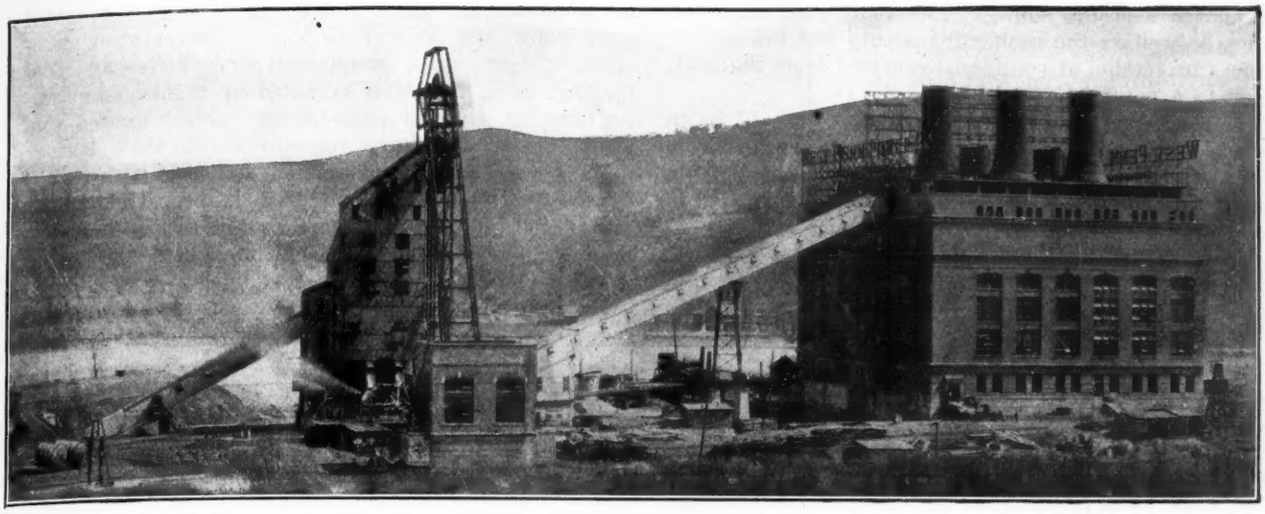
To meet this competition, which threatens not trade born of the war but business established ten or more years ago, the coal operators have cut mine prices to the bare bone. Ocean freights in foreign-flag boats can be had below cost; there remains but the railroad freight to tidewater that is still on a high perch. From $1.40 pre-war to $2.80 now, the rail rate on a gross ton of coal from the Smokeless fields to Hampton Roads stands doubled. It is to lower this rate by at least $1 that the government and coal operators are pressing the railroads.

That the coal exporters turned to the Department of Commerce and that Mr. Hoover not only expressed polite governmental interest in their problem but energetically took up the fight in their behalf is gratifying evidence that at last business has an avenue of approach to Washington that is the zenith of our hopes, as the invitations to Washington of Mr. Calder a year ago were the nadir.

The railroads may or may not extend the necessary relief in export coal rates, and if they do, but a small portion of the coal producers will be directly benefited. The really important issue is that it has been demonstrated that there is a place in the government in Washington to which the coal industry can take its problems of commerce and that there is a man who has the wisdom to appraise a situation and the courage and ability to pursue a solution. Even the slow-minded can now perceive what Mr. Hoover meant last spring when he said he planned to make the Department of Commerce an aid to industry.

IN VIEW OF A REPORT by a prominent firm of certified public accountants controverting the claim of the Bureau of Mines that the Government Fuel Yard has effected a saving on the coal handled through it for government use, Representative Rhodes, chairman of the Committee on Mines and Mining of the House of Representatives, has promised to reopen hearings before pressing the fuel yard bill, which now is on the House calendar. The accountants who went over the fuel yard's accounts and who assert that the government suffered a loss through this operation were retained by the National Retail Coal Merchants' Association. Frederick Stephens, president of that organization, and Joseph O'Toole, its secretary, spent several days in Washington last week. The accountant's report was laid before the chairmen of the committees on mines and mining of the Senate and of the House and also before General Dawes and Colonel Mosely, of the Bureau of the Budget.

PRIVATE FUNDS IN SUFFICIENT VOLUME to make possible a comprehensive study of seasonal coal movements are assured. The study is to be begun at once under the general auspices of the Committee on Mining of the President's conference on unemployment. This is the first of a series of surveys which are to be carried out by Edward E. Hunt, secretary of the conference, in co-operation with the Department of Commercee.



SPRINGDALE HEADFRAME, PREPARATION PLANT, HOIST HOUSE AND CENTRAL STATION

Springdale Mine Furnishes Fuel to West Penn Power Co. Plant, Cleaning Every Car of Coal Before Weighing

Coal Screened to Lump, Nut and Slack Before Picking — For Weighing, Last Two Sizes Are United and Reassembled, but Not Mixed with First — Lump Is Then Crushed and with Nut and Slack Goes to Boilers

By D. J. Baker
Charleston, W. Va.

MINING ENGINEERS have often wondered that coal should so frequently be hauled many miles from the tipple to power plants which might much more profitably be erected there or at least at a short distance away and have explained the uneconomical arrangement either by reflections on the conservatism of the coal operator or on his lack of knowledge of the public-utility business. The right place for the power-generating equipment is at the mine, for thereby the expense of transportation and the uncertainties of railroading are avoided.

At the Springdale mine of the Allegheny-Pittsburgh Coal Company, a subsidiary of the West Penn Power Co., no room could be found on the eastern bank of the river for the construction of a tipple and power plant. On the west side of the river the land is more level than is the east side, where the power company is possessed of a 4,000-acre tract of the "Thick Freeport" coal. Consequently twin tunnels were dug under the river from the steep bank on one side to the more nearly level slopes of the opposite bank.

The buildings have been erected in a swamp on foundations of such height as will permit 20 to 30 ft. of ashes to be dumped around the plant, thus giving a large level area on which operations may be conducted without interference from high water.

As the power plant doubtless is destined to be operating long after the last ton of coal is removed from the large acreage available, recourse is to be had later to river- or rail-borne coal. This coal will be delivered to a storage yard, whence it will be transported by a conveyor to the overhead bins of the plant.

In the instance here outlined the coal plant is merely an accessory of the power plant, which was erected by a power-plant company to meet the power needs of a region that is rapidly calling for more and more purchased power. The West Penn Power Co. has taken a large and valuable part in the supply of power to this region.

In designing the coal-handling equipment on the tipple, provisions were made for receiving foreign or storage coal into the building. Such coal will be crushed and prepared in the same fashion as that now accorded the local product.

Both tipple and power plant have been laid out and equipped so that they may function together in such manner as to effect the most economical production of power at present possible. The preparator has a capacity of 500 tons per hour, and the coal-hauling equipment receiving foreign fuel into the building has a like capacity. For transporting the coal from the tipple to the bunkers over the power house and distributing it evenly, six belt conveyors are utilized. These have an aggregate length including return strands of more than 1,500 ft. The foreign-coal conveyor, which is of the steel-apron type, is 148 ft. long.

The coal in the mine cars is discharged underground in a two-car rotary dump and lifted from the shaft bottom in tandem skips. Each skip has two compartments, one above the other, each of which is discharged through an automatic gate operated by a connecting rod common to both.

The tipple, or preparator, was designed by the company engineers. The general scheme was then detailed by Heyl & Patterson, Inc., Pittsburgh, which firm also fabricated and erected the building. It is built of a structural steel framework, composed mainly of H- and I-beam sections, and given the customary covering of

corrugated asbestos siding. The four headframe columns, as well as the connecting struts and braces, are given a protection of reinforced concrete from the shaft collar to a point 48 ft. above it.

The shafts supporting the head sheaves are 12 in. in diameter and made of forged steel. They are turned to 10-in. in diameter within the journals that run in liberally proportioned ring oiling boxes rigidly bolted to heavy steel beam supports.

A pair of the heaviest sheaves in the district are used. Each is 10 ft. in diameter and built up of a cast-iron rim and hub with double wrought-iron spokes. The rim in each instance is of heavy section with a deep groove to accommodate a rope 1¼-in. in diameter to which the tandem skips are attached. Each skip when loaded will weigh about twenty tons, hence the large cable. Incidentally this rope is one of the heaviest, if not the heaviest, employed in the western end of the state.

After the mine product has been discharged from each compartment of the skip it enters one of two pairs of receiving pans, one pair being provided for each compartment of the shaft. These receiving pans lie one above the other, so that each carload of coal may not lose its identity. This is desirable for reasons that will be mentioned later. Each pan is built up of ¼-in. steel plates and angles and is equipped with ⅝-in. flaring side guards to prevent loss by spillage. The bottoms of the pans are constructed of ⅜-in. steel wearing plate, and the sides are 24 in. high. Each plate section is renewable.

A flygate, forming a section of the bed, allows rock and refuse carried by either compartment of the skip to be shunted directly to a rock bin. This fly is operated electrically from the shaft bottom. The operating mechanism consists of a compressed-air cylinder and controlling valve, the latter actuated by a solenoid receiving current from a push-button control located convenient to the car-dump operator at the shaft bottom.

Thus when a skip compartment is loaded with rock at the bottom, the refuse material is properly directed into a chute and away from the preparation equipment by the mere pushing of a button, which throws the gate in the desired direction.

Heretofore, and particularly where self-dumping cages are used, the practice has been to station a man on the tipple to operate the flygate. When a car of rock was hoisted to the surface, he had to be signalled from below. This, of course, entails a certain appreciable loss of time, besides being prodigal of labor. With an arrangement such as the one at Springdale the men on the preparator are unmindful of whether rock or coal is being carried in the skip, so complete are the mechanical arrangements in this respect.

HEADFRAME, PREPARATOR AND FOREIGN-COAL CONVEYOR

Coal from other mines can be brought in by railroad or by boat. If it comes by railroad it is dumped into a large steel hopper and carried by a reciprocating feeder to an apron conveyor, which delivers it to the hoppers above the rolls. If it arrives by boat a gantry puts it either where a locomotive crane can deliver it to the railroad hopper or into storage, where it can be placed on railroad cars which carry it to the hopper. It can also be put into storage from railroad cars if that disposition of it is desired.

Rock Cars Cause Not an Instant's Delay

The methods of handling rock at this plant are unusual. No time is lost at the bottom in shunting cars out of a trip arriving at the landing. Each car passes through the rotary dump in its proper order regardless of what it contains. As a result all cars underground are in service and none lies about idle because the rock-disposal equipment is temporarily overburdened. A continuous and uninterrupted flow of cars takes place to and from the workings. Such a condition must obtain if the mine is to be operated economically.

From the receiving pans the coal passes by gravity to receiving hoppers having top dimensions of 7 x 18 ft. and a capacity of 4½ tons. Beneath each hopper an apron feeder 7 ft. long has been installed to control the delivery of coal to the screening rig. Each is built of two strands of steel-bushed roller chain to which are attached ¼-in. double-beaded pressed-steel pans 42 in. wide, the whole forming a continuous belt. Each of these devices delivers run-of-mine product to one of two lump screens at the rate of 620 tons per hour.

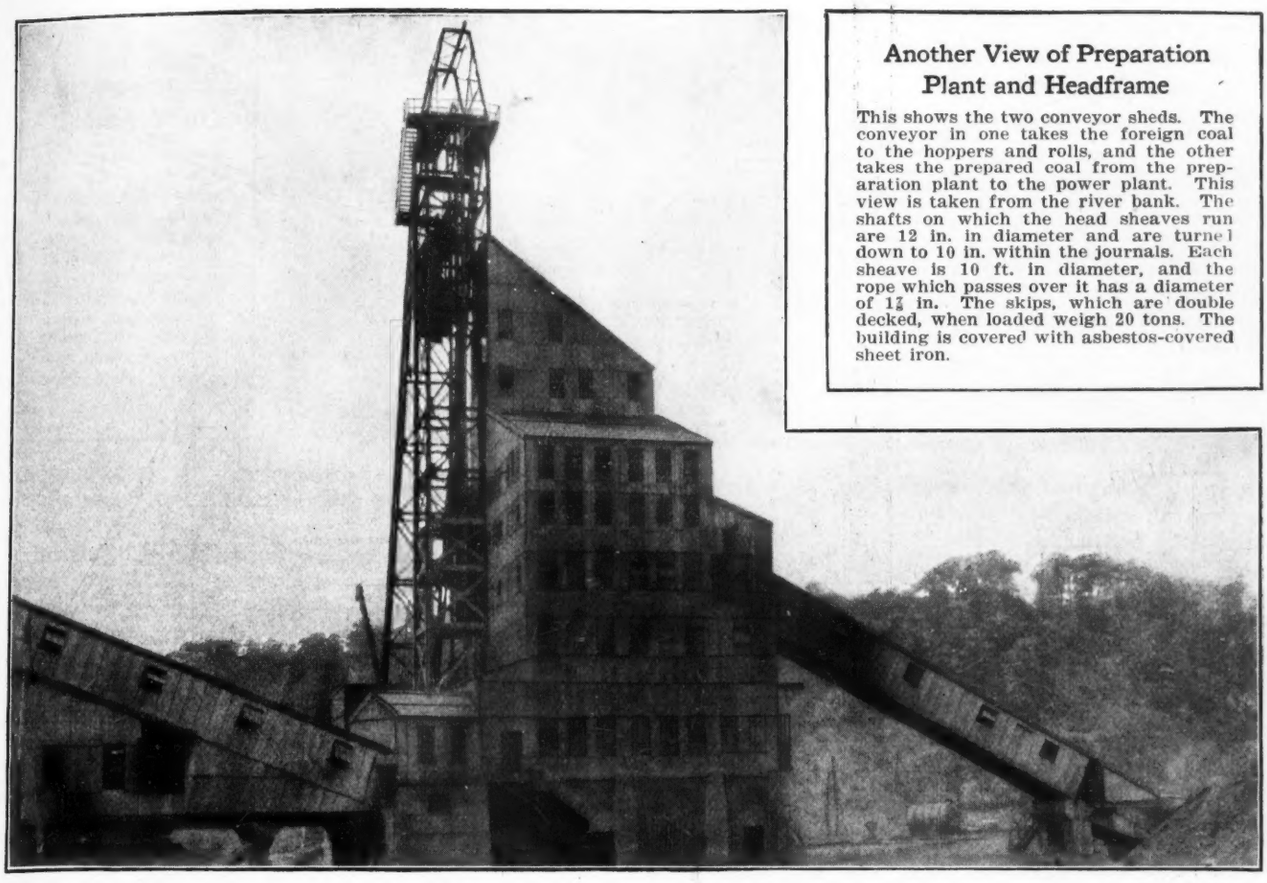
Each Coal Car Can Be Picked Separately

It will be recalled that the preparator has a capacity of 500 tons per hour. The coal is delivered to the screens at a higher rate in order that there may be a vacant space on the tables between all skiploads. Thus each car sent out may be picked separately.

The feeding apparatus in each instance is driven from the tail shaft of the lump or nut table that it serves, transmission being made through a roller chain. The driving sprocket is equipped with a jaw clutch, so that the feeding mechanism may be stopped independently of the picking tables. Each feeder is self-contained on a rigid structural-steel frame having steel-angle tracks and ¼-in. side plates to prevent spillage.

From the feeder the coal is delivered to the screening rig, which also is in duplicate. This is of the gravity bar type. Here the product is separated into what may be termed lump and undersize, the division being made at about 3 in. in diameter. Each separator is 6 ft. long and 4 ft. wide and is built up of ¼-in. side and bottom plates, the sides being raised to a height of 18 in.

At times it is desirable to deliver the mine product direct to the picking tables in order that it may be cleaned and weighed before being loaded into railroad cars for



Another View of Preparation Plant and Headframe

This shows the two conveyor sheds. The conveyor in one takes the foreign coal to the hoppers and rolls, and the other takes the prepared coal from the preparation plant to the power plant. This view is taken from the river bank. The shafts on which the head sheaves run are 12 in. in diameter and are turned down to 10 in. within the journals. Each sheave is 10 ft. in diameter, and the rope which passes over it has a diameter of 1⅞ in. The skips, which are double decked, when loaded weigh 20 tons. The building is covered with asbestos-covered sheet iron.

placing in storage. Accordingly, veil plates that readily may be lowered into place are hinged to the side of the screens. Each screen section is constructed of standard tapered bars with the lower ends turned backward so as to form steps, thus making the surface self-cleaning. The upper ends and centers of the screen bars are supported in notched bearers and their lower ends are spaced on a rod by means of pipe separators, so as to provide an interval of about 3 in. between adjacent bars.

Undersize, or material going through the screen, drops onto the nut screen below. The smaller coal is thus separated into nut and slack before the product reaches the picking table. The lower screen is of the same dimensions as the one above it, but is of a different type of construction, being built up of double-notch bearers spaced on 30-in. centers carrying standard steel tapered bars held in position by a dead plate. These bars are given a 1¼-in. spacing. Coal passing them is termed slack. From both lump and nut screens the coal is fed to the picking tables by gravity, the contents of alternate skip compartments being delivered to each table.

A special picking table has been installed for the lump coal with provision for a duplicate unit to be installed later. The table is 29 ft. long and 5 ft. wide. It was assumed in designing the plant that roughly 50 per cent of the run-of-mine product would bear separation into lump and a similar amount into nut and slack. Thus when the lump product is distributed on the tables, having a speed of 50 ft. per minute, this size is carried to a depth of 5 in. The lump from each mine car is picked separately, as has been already mentioned. A vacant space is formed on each table due to alternate skiploads being distributed to both conveyors. In this way each table can handle 155 tons of lump per hour.

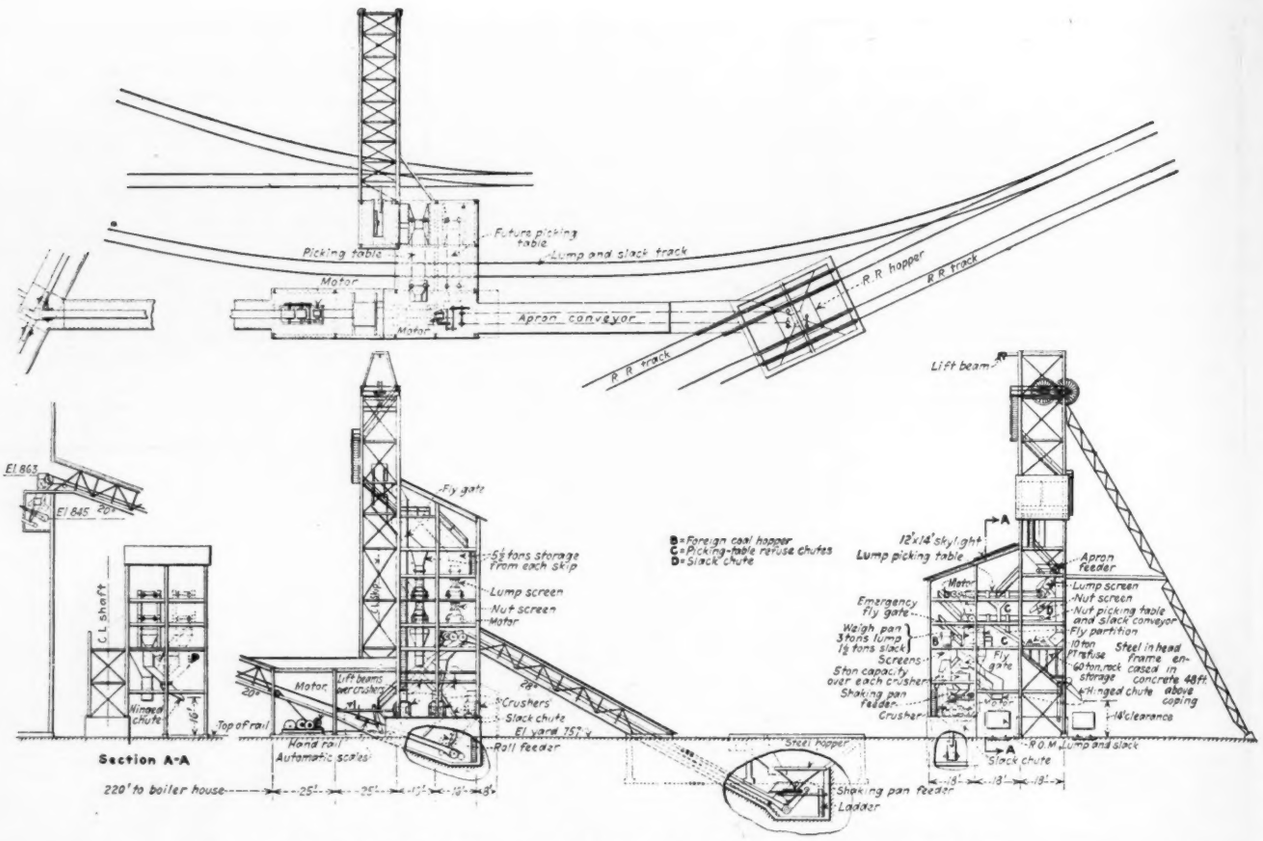
Each picking table is constructed of two strands of 12-in. pitch steel-link roller chain running on 5-in. diameter rollers. Quarter-inch steel pans 5 ft. in length are attached to this chain, so as to form a continuous conveyor. The chain is made up of 3 x ⅜-in. bars set two and two and connected by 1-in. diameter steel pins which extend across the conveyor beneath the pans, coupling the two strands of chain together. Steel-tube bushings are attached to the pins so as to form an easy bearing surface for the rollers and links.

Each table is driven by a 15-hp. motor through a silent-chain transmission, one cut-steel gear reduction and a thimble-roller chain. Both tables are self-contained on a rigid structural-steel frame and operate over 20-lb. steel rail tracks. Each also is equipped with ⅛-in. stationary side-guard plates, preventing spillage.

From the nut screens and slack pans the smaller sizes are delivered by chute to a combined nut-coal picking table and slack conveyor located on a lower floor directly under the lump picking table. This table is of the same design as the lump tables, except that partitions divide the conveying surface into three compartments. The two outer compartments are 24 in. wide and carry the nut, while the inner one of the same width contains the slack. The table is driven by a countershaft from the nearby lump table through chain transmission.

Discharge chutes at the lower end of each lump and nut-and-slack table deliver these sizes into a two-compartment weigh pan, the lump going into one hopper and the cleaned nut and slack into another. A flygate is installed where the tables approach each other at the weigh pan so that all the coal may be delivered to the lump compartment when, in emergency, the screens are not utilized and the picking tables are transporting nothing but run-of-mine.

Each weigh pan has an individual capacity of 5 tons.



PLAN AND ELEVATION OF HEADFRAME AND PREPARATION PLANT

The plan shows the unusually large railroad hopper over which two tracks, well separated, pass. From the elevation can be seen the height of the headframe, which has to be excessively high to take care of both decks of the skip hoist. The shaft is relatively shallow but the headframe makes up in part for the shortness of the underground lift. The plant is built solely for preparing stoker fuel. The concrete foundations are set high so that in places 30 ft. of fill can be provided.

Each is built with two compartments, one container holding the lump and having a capacity of 2½ tons, and the other, of 2½-ton capacity, receiving the nut and slack. Here the two sizes are weighed together on scales equipped with a quick-weighing dial.

As will be noted, only one unit of picking table and weigh pans is installed. Space is provided in the tipple structure for a duplicate installation to be erected when needed for full capacity.

From the lump compartment of the weigh pans, after weighing, the coal enters a double-forked chute. One branch may be utilized—as is usually the case—to deliver this size to a hopper located over the crushers, or the other chute may be employed when it is desired to load the coal into railroad cars beneath the building for placing in storage. The chute from the nut and slack compartment of each weigh pan is similar in shape and purpose to the lump chutes, in that one branch may be used to deliver the finer sizes to a roll feeder over a belt conveyor, while the other fork permits the product to be loaded into railroad cars and thence placed in storage. A flygate is employed to direct the coal into the proper branch of the chute.

Both pairs of chutes are built up of ¼-in. steel plate and angles with sides 18 in. high. A gate of chop type is installed in the railway delivery lump chute, so that cars may be changed on the tracks without hindering steady operation on the tipple. These gates are operated through suitable mechanism from the track level. The discharge ends of both slack and lump chutes are hinged and counterweighted, thereby permitting them to be raised out of the way when not in use. A clearance of 22 ft. is made possible by this arrangement.

If the coal in the lump compartment of the weigh pan is not intended to be loaded out for storage, it is directed by the flygate, already referred to, to one of two crusher hoppers, each of which has a capacity of five tons. The bottom of each hopper is equipped with a reciprocating feeder.

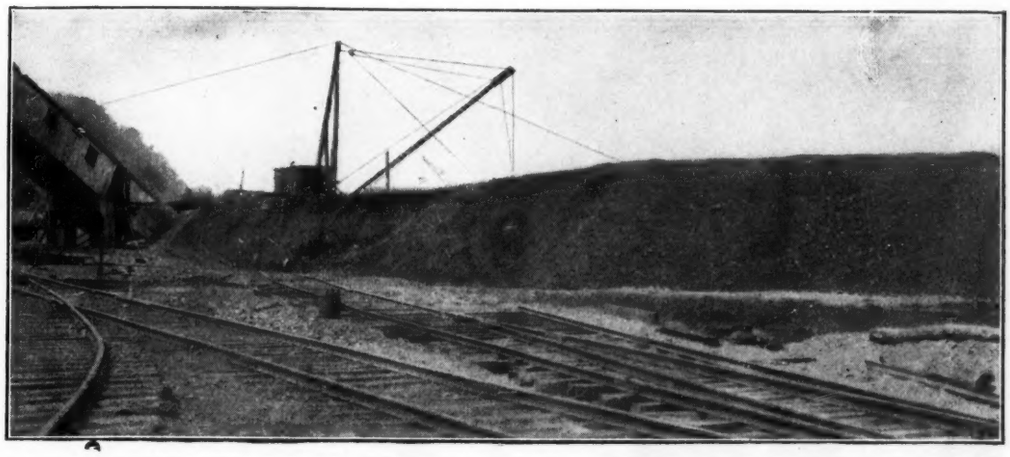
The feeding pans are 42 in. wide and 5 ft. 8 in. long. Each is supported as an individual unit on four 8-in. diameter single-flange bronze-bushed cast-iron rollers. Each is driven through a countershaft from its crusher by means of a belt, a spur-gear reduction, adjustable cranks and connecting rods. The design of the cranks is such that any length of feeder stroke up to 6 in. may be obtained. The maximum capacity of the feeders is about 175 tons per hour.

From the feeders the coal may be directed into either of the crushers. Provision has been made for the installation of a third crusher, which will be held as a spare, except when coal is being reclaimed from storage while the preparator apparatus is operating to capacity. The crushers are of Heyl & Patterson manufacture and each has a capacity of 175 tons per hour. Each is composed of four 30 x 42-in. rolls, self-contained within a heavy cast-iron frame. The upper pair of rolls is fitted with Cornish teeth, while the lower pair has corrugated faces. Both are made of white charcoal iron.

One set of rolls is fixed while the others are given an adjustable mounting. This is accomplished by securely fastening the pedestals of the fixed rolls to the frame. The pedestals of the adjustable rolls are mounted in finished grooves and are held to their duty by heavy steel springs placed behind them. The tension springs

Part of Storage Yard

Both coal from the Springdale mine and that which comes in by railroad and boat can be stored. It is to be reclaimed by stationary and locomotive cranes discharging into the hopper of the 28-deg. conveyor to be seen on the left.



are so mounted as to provide for the rolls being adjusted as desired. Any adjustment throughout a range of 6 in. may thus be made.

Bearings for the adjustable rolls are of the ball-and-socket type and either one can move backward independently of the others so as to pass unbreakable foreign materials. Both adjustable rolls are driven by a belt equipment with a counterweighted tension pulley. In this manner the roll adjustment can be varied at will and yet permit the rolls to move backward to the full depth of their spring compressions in the event that material that cannot be crushed find its way into the machine. When the rolls are set to deliver a 1¼-in. crushed product the springs will allow an emergency separation of 4¾ in. Each crusher is geared to and driven by a 75-hp. motor.

Another feeder handles material from the slack-and-nut compartment of the weigh pan to a belt conveyor leading to the power house, where the finer sizes not requiring crushing unite with the crushed coal and make up the stoker fuel. The feeder in question is of the roll type, 16 in. in diameter and 24 in. in length. It is built up of 2 7/16-in. shafting on which is fitted three sectional cast-iron rolls, each 8 in. wide and having a corrugated face. The rolls are mounted in a steel-plate casing. Over them a gate is installed to control the depth of coal being fed to the conveyor. This is fitted with a hand wheel and feed-bar operating mechanism, so that its position may be varied and fixed as occasion demands. The feeder is driven from the tail shaft of the belt conveyor leading to the power house through a steel-thimble roller-chain transmission.

Refuse Is Distributed by Railroad Cars

It might be well at this point to note what arrangements have been provided for handling rock and refuse coming from the mine. After passing the flygates at the head of the receiving pans on the tipple, these being thrown from the foot of the shaft, as has already been described, this material gravitates by way of a chute to a rock-and-refuse bin having a capacity of seventy tons. Of the total capacity of this container a space accommodating ten tons is always available for picking-table refuse. This section of the bin cannot be filled with rock from underground.

This bin is constructed of a steel frame and lined with ¼-in. plate, the bottom having a covering of ⅜-in. renewable wearing plate. For the purpose of delivering the rock and refuse to a railroad car for disposal as fill around the surface plant, the bottom of the bin is equipped with two gates and chutes. The former are of the undercut type and are operated through chain, chain wheels, pinions and segments. The chutes are hinged and connected by rope to a hand wheel and gear-drive winding rig, so that they may be raised in the clear when not in use.

As is necessary at a coal-mining plant built expressly for supplying fuel to power-house bunkers, a suitable apparatus must be provided for receiving foreign coal into the station when the mine is down and the bunker supply is low. The West Penn Power Co. has amply provided for this contingency at Springdale.

Cars of foreign coal may be discharged over a concrete hopper built in the yard adjacent to the tipple and away from the power house. This container is lined with steel plate, and the top dimensions are 32 x 40 ft. A feeder is placed in the bottom to control the delivery of coal to an apron conveyor leading to the tipple.

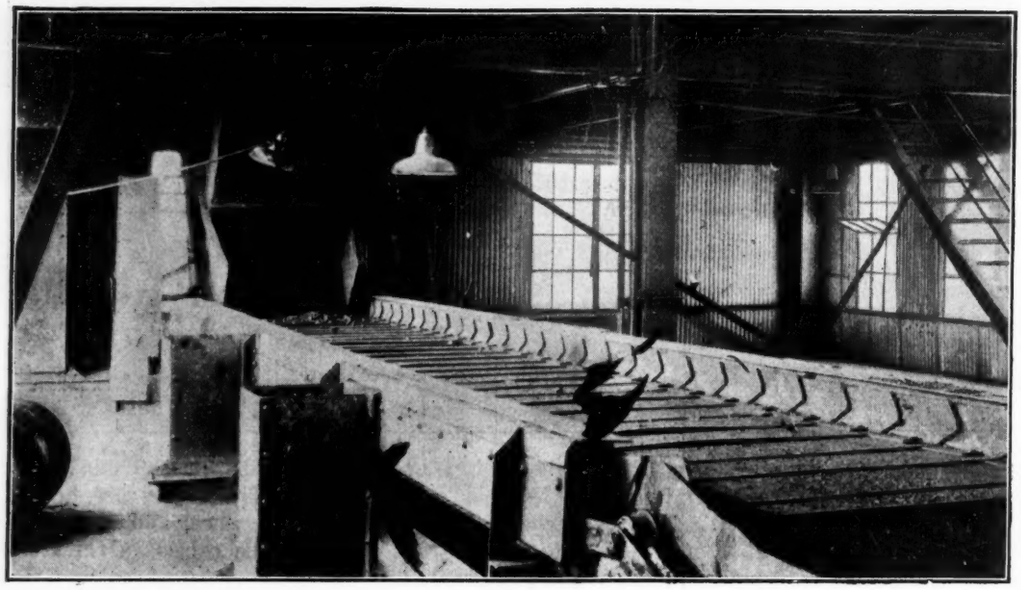
Concrete Hopper Provided With False Bottom

A false bottom is constructed in this bin in order that drainage water may be led to a pit and thus kept from corroding the feeder mechanism and lower conveyor parts. If more cars are to be unloaded than the hopper can accommodate, any or all of them may be run out to the storage piles and discharged there. Later this coal is reclaimed and placed in the receiving hopper by a locomotive crane which is employed also in transferring fuel that may be received by river barge and unloaded by a gantry crane.

The feeder in the bottom of the receiving hopper has the same capacity as the other preparation units, namely, 500 tons per hour. It is of the same type of construction as the one utilized in delivering the run-of-mine product to the lump screen on the tipple and is driven from the tail shaft of the conveyor through a chain transmission, adjustable cranks and connecting rods.

From the feeder the foreign coal or the fuel reclaimed from storage enters an apron conveyor, to be elevated into the preparator and discharged into one of the three hoppers feeding the crushers. As domestic coal is cleaned before being placed in storage and the foreign product receives similar treatment before being shipped, there is no necessity for running this material over picking tables a second time.

The foreign-coal conveyor is 148 ft. in length and consists of two strands of roller chain of 18-in. pitch to which are attached 48 in. double-beaded pressed-steel pans. Steel retarding angles are riveted to the face of the pans on 3-ft. centers, thus preventing the coal from slipping backward down the slope. This con-



A Lump Picking Table

The coal is sized into lump, nut and slack over gravity bar screens. It then passes to duplicate picking tables for each size. This table is of the apron type and has raised side-guard plates. What impurities are found are dropped into the vertical chutes shown at the side of the table.

veyor is driven by a 40-hp. motor through a silent-chain transmission and two spur-gear reductions. It has a speed of about 62½ ft. per minute. A half-torque magnet brake is installed on the armature shaft of the motor as well as a self-setting brake of the band type on the first countershaft to prevent a backward movement of the conveyor if stopped when loaded.

This conveyor is carried on a rigid structural-steel frame. It is provided with 30-lb. steel-rail chain tracks and side guards 12 in. high. It is housed in a gallery, as shown in the accompanying illustrations. This is provided with a concrete stairway along each side of the moving pans, each fitted with a handrail.

At the head of the conveyor the coal is delivered to a chute, thence passing over bar screens, where the slack is removed, to be bypassed to the slack coming from the weigh pans. The lump sizes are directed to one of the three hoppers serving the crushers. After crushing the product mingles with that prepared in the tipple and is fed by an oscillating feeder to the belt conveyor leading to the bunkers in the power plant.

Power-House Bunkers Hold Five Days' Fuel

Sufficient coal may be stored in the power-house bunkers to keep the boilers under full steam for five days. The delivery conveyor consists of an 8-ply belt having a ⅛-in. coating of rubber on the carrying side. This conveyor is 316 ft. long, 42 in. wide, and travels at a speed of 400 ft. per minute. This movement allows the handling of 500 tons per hour. The concentrators of this belt are spaced on 4-ft. centers and are of the five-pulley type. Concentrator shafts are made of cold-drawn steel tubing and form a continuous grease reservoir, the lubricant being supplied by two compression cups, one at either end. The tubular shafts are supported from steel-channel bases by cast-iron brackets.

To carry the return strand from the power house 6-in. idlers spaced on 10-ft. centers are employed. A rotary cleaning brush has been installed at the head of the conveyor, power for its operation being supplied through an idler pulley. The conveyor is driven by a 75-hp. motor through a silent-chain transmission and spur-gear reduction. The driving pulleys are lagged. Like the reclaiming conveyor at the other end of the structure, a half-torque magnet brake is installed on the armature shaft of the motor. This arrangement prevents the belt from running backward when loaded if the power is shut off. All gears, the driving shaft and the motor are mounted on a common heavy structural-steel bedplate, thus reducing vibration to a minimum.

The conveyor leading from the tipple to the power house is housed in a gallery, as shown in the illustrations. The floor of this gallery is built of steel supporting members and reinforced concrete 3 in. thick. Steel channel cleats are set in the walkways upon either side of the belt so as to provide a firm footing up the slope. A hand railing also is built along each walkway. Thus this conveyor may be easily inspected or repaired. The conveyor itself is supported by two channel stringers raised about 24 in. above the floor, thus providing room for the return strand. Near the foot of the conveyor a 42-in. weightometer is installed to record automatically the amount of coal going into the bunkers.

Coal Samples Taken at Regular Intervals

At the head of the conveyor within the power house a three-way chute is built, wherein flygates have been installed to control the delivery of the coal to the various sections of the concrete bunkers. At predetermined time intervals a "handful" of coal is removed from the head end of the belt by a mechanical device. Coal thus taken is chuted to a small crusher where it is crushed for sampling purposes. The product being received into the bunkers is tested at regular periods to insure the boilers receiving good coal.

For distributing the coal at the head end of the belt conveyor reaching to the power house, five other belt conveyors are employed. Three of these are equipped with tripping mechanisms to discharge the belts at suitable points and at predetermined intervals, thereby effecting an even distribution of coal in the bunkers. Two cross conveyors receive the coal from hoppers where it has been deposited by the belt from the tipple. The cross belts direct the crushed product to the two outside longitudinal conveyors, which distribute it to the bins above the boilers; the belt for the central bunker receives its coal direct from the main conveyor. The conveyors have a capacity equal to that of the preparation equipment on the tipple, which, as stated, will handle 500 tons hourly.

Both cross conveyors are of the same type of construction, each being 44 ft. long, 30 in. wide, and

employing a five-ply belt having a ⅛-in. rubber coating on the carrying side. Each is driven through a silent-chain transmission and a spur-gear reduction, the speed of travel being about 400 ft. per minute. At the head of each a chute is provided for delivering the coal to the three belts running at right angles to them.

All the longitudinal belts are identical in construction. They are 120 ft. long, 30 in. wide, and have a speed of 400 ft. per min. Each is driven by a 15-hp. motor and is equipped with a self-propelling continuous-running automatic tripper that evenly distributes the coal to the bins. These latter machines run on 20-lb. steel rail laid on the conveyor decking. They operate without attention. From the bunkers the coal is conveyed to the stokers through downcomer pipes. The boilers are of large size and are stoker-fired from both ends.

Construction of the tunnels 65 ft. under the river as well as that of the tipple and the power house proceeded at a higher speed than the construction of the remaining surface buildings. This was done in order that fuel might be available as soon as possible for cenversion into electrical energy. As a result the other mine buildings, all of which are interesting in design and equipment, have not yet been completed.

I wish to take this opportunity to thank R. C. Beerbower, general superintendent of mines of the West Penn Power Co., for the many courtesies extended to me in obtaining data covering this plant and mine. His kindly co-operation has made the writing of this article a pleasurable task and illustrates as possibly nothing else could the progressive spirit actuating the officials of this great public utility company.

Shaft-Sinking Methods, Mine Layout, Trip Handling and Two-Compartment Skip Hoist at Springdale

Shaft Sunk to Bedrock by Use of Caisson—Seven-Entry System —Pillars May Be Mined on the Advance—All Trips Pass Under River—Two Cars Will Be Dumped at One Time

BY ALPHONSE F. BROSKY*

SOON after the decision had been reached to connect the Logans Ferry mine with the central power station of the West Penn Power Co., across the Allegheny River, active construction began. In the summer of 1920 work was started on the sinking of the hoisting shaft at a point a little north of the central station. The usual method of excavating shafts was adopted. As the sandstone strata above the coal are overlaid with a thick cover of glacial drift and alluvium, however, it was found necessary to change these methods in consequence of the large quantities of water to be handled.

The elevation of the surface at the shaft site is 744 ft. above sea level, and the existing water line and pool height are 736 ft. and 733 ft. respectively. It was believed that the best course to pursue in sinking through the loose material would be to drive sheet piles around the excavation. It was hoped that the rapidity with which pile driving and excavation would proceed might far outweigh the expense of driving the piling. The distance from the surface to bedrock is about 63 ft. Experience shows that the maximum depth to which pile driving may be carried varies from 75 to 100 ft., depending on the nature of the material penetrated. When, therefore, the decision was made to sink the shaft by piling, this procedure was thought to be well within the bounds of engineering possibility.

Vertical sheet-steel piles were used, the intention

*Bituminous editor, *Coal Age*.

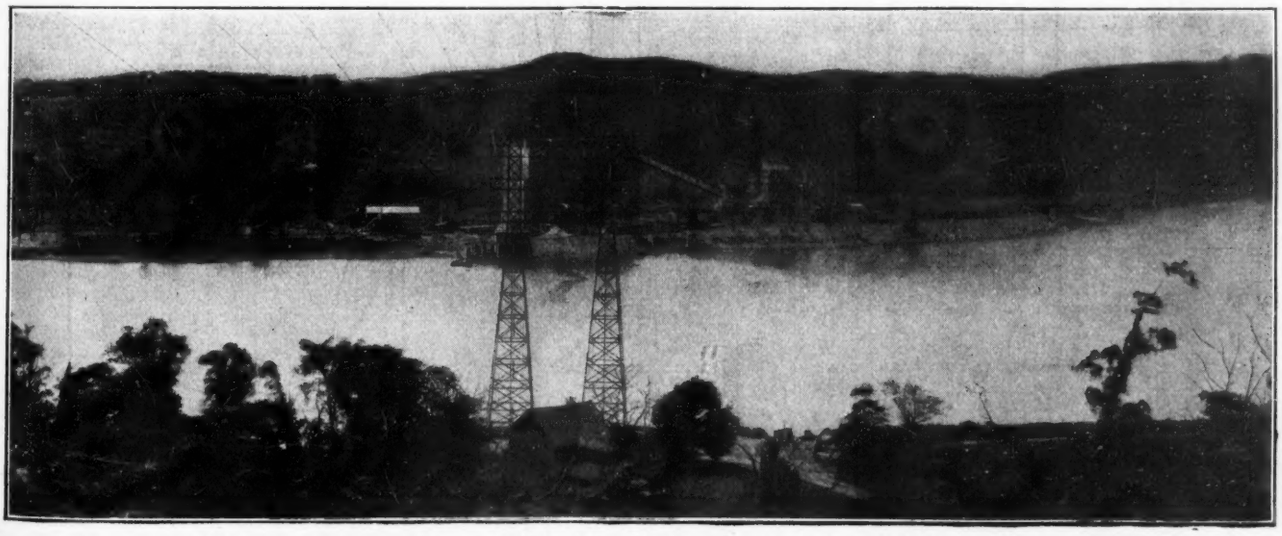


FIG. 1. SPRINGDALE PLANT AND TRANSMISSION TOWERS SEEN FROM LOGANS FERRY SIDE OF RIVER
This gives a good idea of the level area on which the plant is located. In a few years this land will be filled up some 30 ft. higher with ashes from the boiler furnaces, rock from the mine and refuse from the picking tables. The power plant cost $6,000,000

being to drive several courses in order to attain the desired depth. The rectangular area enclosed by the pile line was approximately 25 x 29 ft. Sump and pumping provisions appeared to be ample for the removal of all water that might enter the shaft as execavation progressed. Indeed little trouble was experienced in sinking the shaft by this method until an elevation of 709 ft., or a depth of 35 ft. below the surface, had been reached, but below this level the pumps were entirely unable to cope with the rapid influx of water.

By the time the excavation had reached an elevation of 704 ft., conditions were such that the largest possible pump installation was just able to hold its own. Furthermore the driving of piles had become difficult, for their cutting edges began at this level to strike boulders.

Any further attempt at pile driving would have resulted in the spreading and distortion of the sheets because of the boulders. To overcome the difficulties at hand, the pneumatic or closed-caisson method was resorted to, the work being carried on by the Foundation Co.

As the shaft had been sunk to a depth of 33 ft. by the piling method, the caisson plan had to be modified to meet the conditions encountered. The first step was to refill 5 ft. of the excavation so as to raise the bottom from the point where pumping was found inadequate to an elevation at which all the water entering could be voided. The pump installation was kept intact, temporarily. By referring to Fig. 2 and to the vertical section C-C of the shaft during sinking, an idea may be gained of the conditions that prevailed. The cutting edge of the caisson was placed at the level attained by backfilling, and the oval walls (section D-D) were built up in 5-ft. lengths.

The reinforced-concrete deck shown was built in such a way that, after the completion of the shaft, it could readily be removed by blasting. This is indicated by section A-A. For this purpose 2-in. blasting pipes were set in the concrete at fixed intervals. As the lining walls were built up, the pile braces were removed and the intervening space filled. Upon passing the ground level with the lining-wall construction, the caisson method proper was followed, this procedure being maintained until bedrock was reached.

In this work the Moran type of air lock was employed under an average air pressure of 23 lb. The lining was sunk through 10 ft. of seamy rock to a solid footing. Here it was sealed to the solid with concrete, which was kept under air pressure for a period of three days, after which the air lock, shafting and deck were removed. The water was completely sealed from the shaft as far as bedrock.

The rest of the shaft below this point was then completed by the owners, its total depth being 162 ft. Sections of the hoisting shaft are shown in Fig. 3. This shows the man compartment with its zigzag steel stairway. No pipes or other obstructions of any kind are to be found in this compartment and a safe traveling way for men is thus provided against the time of need.

Simultaneous with shaft sinking on the Springdale side, a double-deck slope was being driven on the Logans

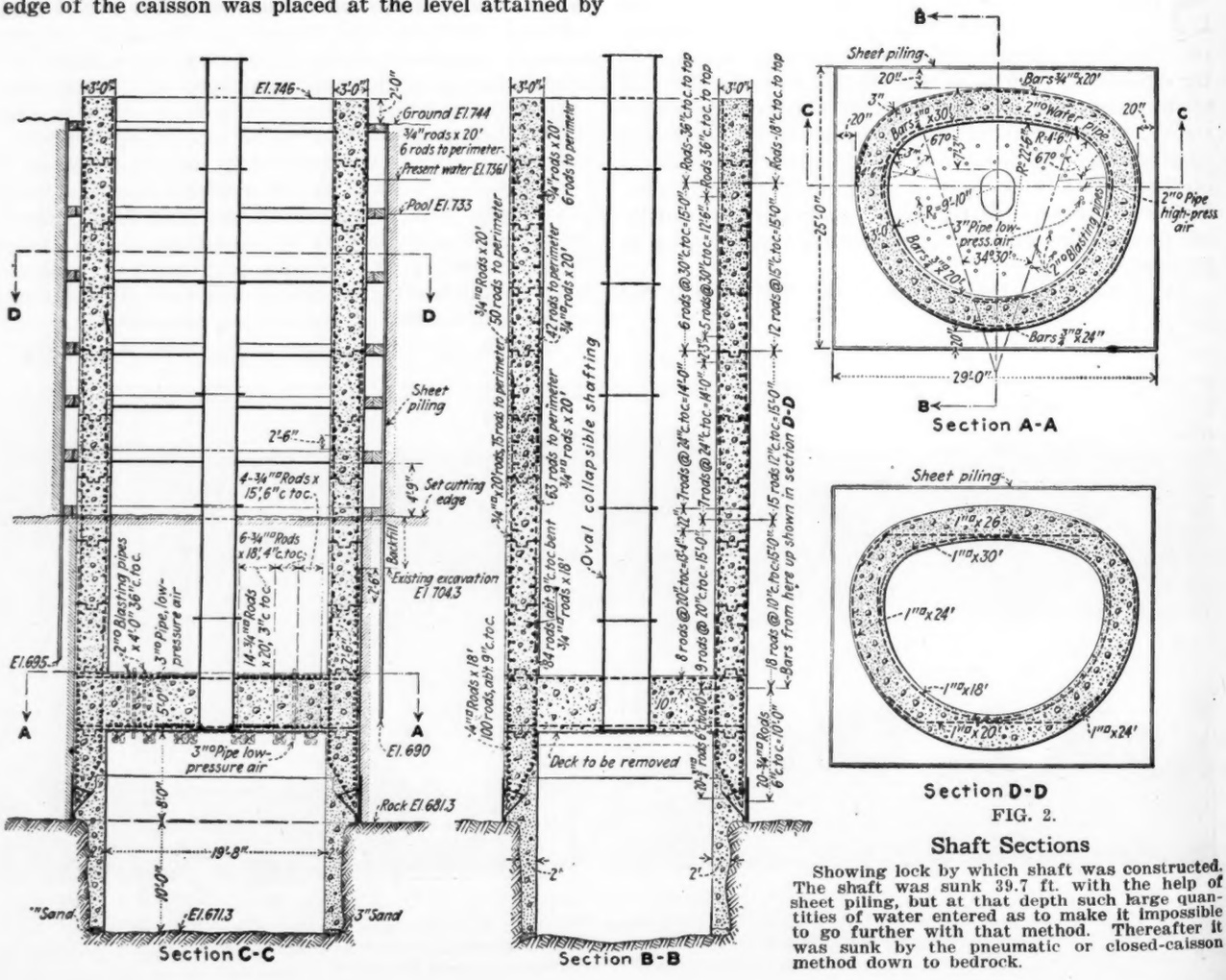


FIG. 2.

Shaft Sections

Showing lock by which shaft was constructed. The shaft was sunk 39.7 ft. with the help of sheet piling, but at that depth such large quantities of water entered as to make it impossible to go further with that method. Thereafter it was sunk by the pneumatic or closed-caisson method down to bedrock.

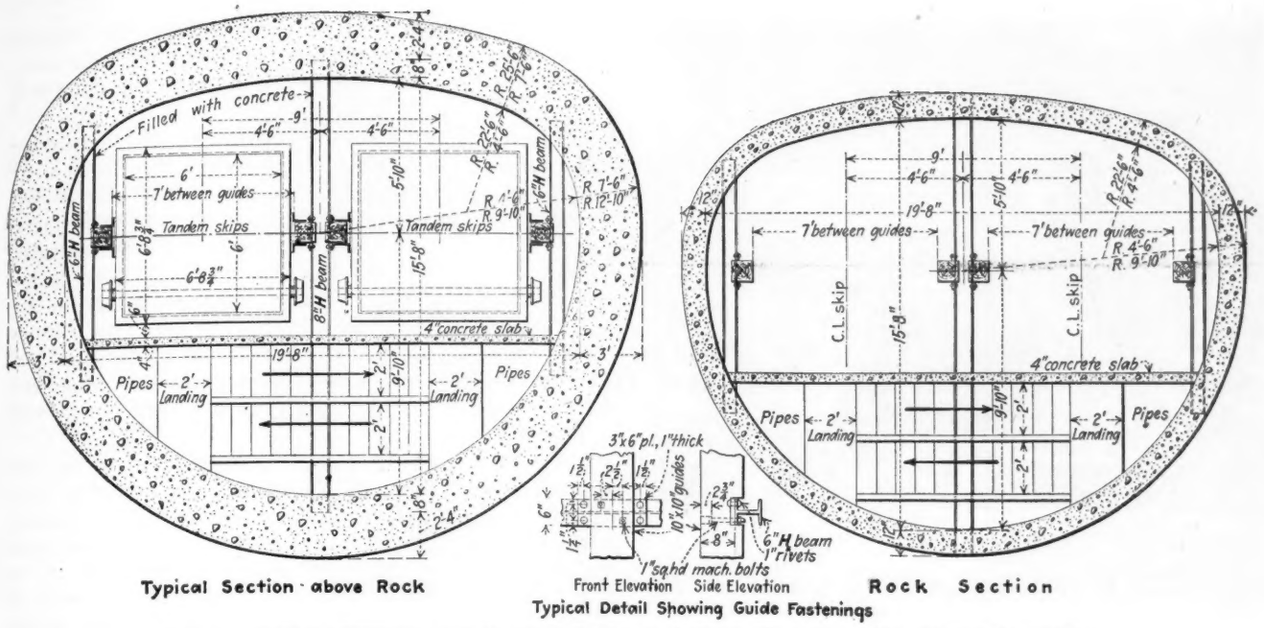


FIG. 3. CROSS-SECTIONS OF MAIN HOISTING SHAFT IN SAND AND IN SOLID ROCK
The shafts are of an unusual shape with a stairway adjacent to the two skip compartments but separated by a 4-in. concrete slab. Pipeways are provided on either side of the stairway compartment

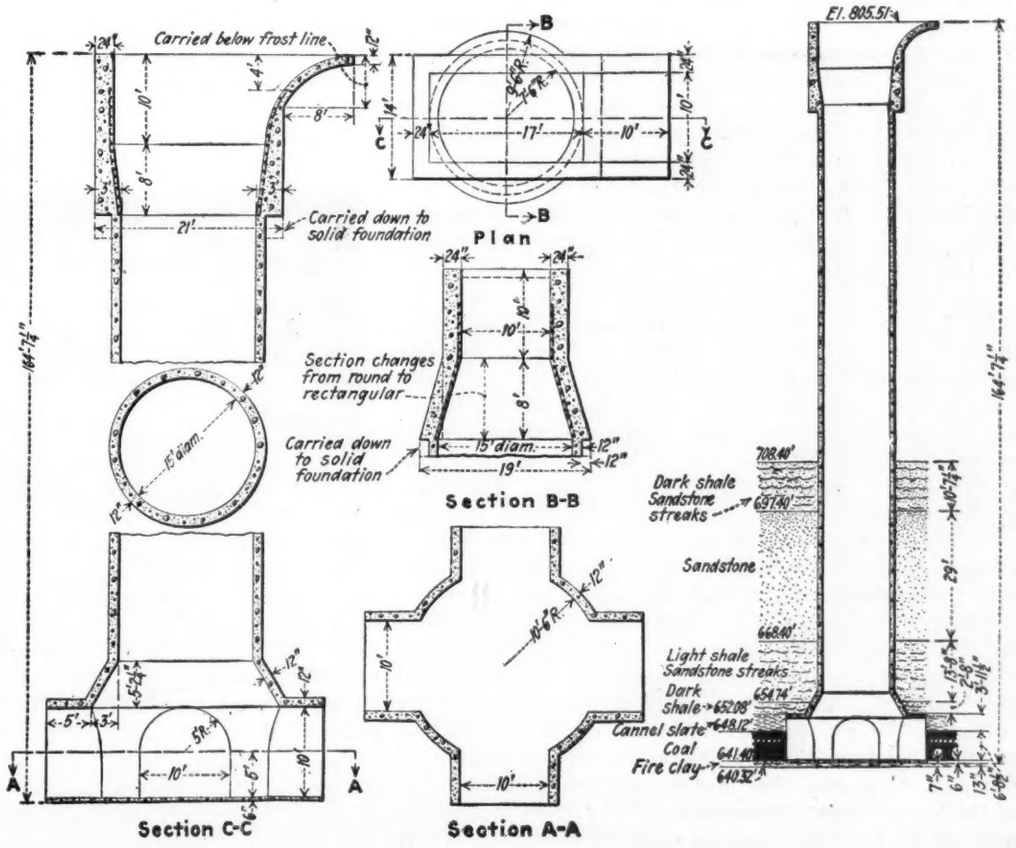
Ferry side. The R. G. Johnson Co., of Pittsburgh, Pa., was the contractor for this work. The considerations which prompted this type of slope are: (1) The construction cost of the double-deck slope is only slightly greater than the cost of a double-width slope; (2) by placing the manway on the upper deck and the haulageway in the lower compartment, safety is assured, whereas in a double-width slope the curtain wall separating the manway from the haulage compartment might be damaged or broken by a wreck, thus imperilling the lives of the men; (3) the arrangement adopted keeps the men away from the haulage road at the slope bottom; (4) all pipe and electric-transmission lines are located in the upper passage, where they are safe from injury that might result from car wrecks.

The upper and lower decks are not of the same length. The former is 542 ft. and the latter 464 ft. long, the grade being 33⅓ per cent. At the lower end of the upper deck a roadway turns to the left and, crossing over the top of the haulage road, connects the slope with the

FIG. 4

Cross-Sections of Airshaft

This shaft is truly circular and 15 ft. in diameter. At the bottom it turns from a circular to a rectangular cross-section. Being round, smooth, unobstructed and of generous proportions, it will pass a large quantity of air with minimum resistance, which indeed will be needed, as seven main entries will be driven out into the field, and of these four will be airways.



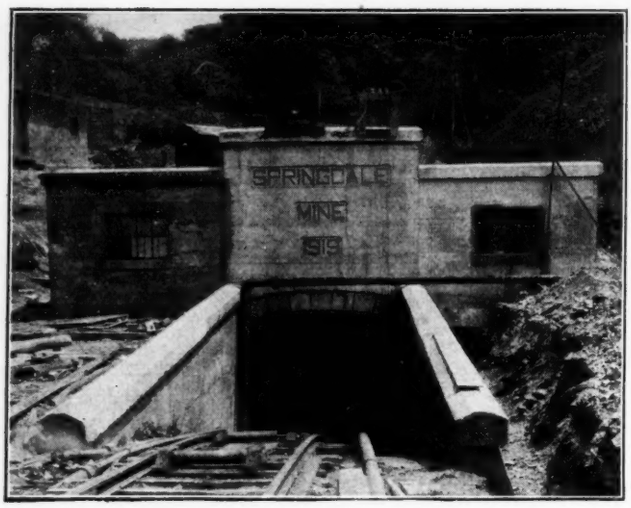


FIG. 5. SLOPE FOR HOISTING AND LOWERING MATERIAL

This slope is on a 33⅓-per cent grade. The men also use this slope, traveling on the upper deck. They are thus protected from accident.

manway of the main entries. Sections of the slope, Figs. 10 and 11, afford a very much better idea of the construction than could a detailed description. However, the sequence followed in the roof, floor and wall construction should be of interest. The lower concrete floor was laid first, keeping in advance of the side walls. The walls of the lower compartment in turn were kept ahead of the upper deck floor, which latter was itself followed by the upper arch.

As yet the mine is still in the development stage, entry coal only being produced. The contract awarded the Foundation Co. in connection with the driving of the river tunnel included development work on both sides of the stream necessary to complete a limited haulage system preparatory to the opening up of the mine. To this end the company drove headings aggregating 1,100 ft. in length on the Springdale side and 5,200 ft. in length on the Logans Ferry side. These distances include main entries and branches. When the tunnel was completed the mine was producing approximately 350 tons of entry coal daily. Today, seven months after the tunnel was finished, the output has increased to 800 tons. The production curve is rising rapidly, even though rooms are not being driven.

The proposed layout of the mine involves many interesting details. Seven main entries will extend into the field. Their dimensions will be 11 x 7 ft., the latter being the average height of the coal. One of these entries is the manway, while two others are the loaded and empty haulageways. The remaining four are air courses. The loaded and empty haulageways are continuations of the river tunnel headings. The main entries are on the butt, extend east and west, and continue until they reach a point approximately 900 ft. from the slope bottom, where four of them turn south into the main coal body, thus becoming face entries.

All main entries will be protected by 200-ft. pillars on either side. Other face entries will be turned off at intervals of approximately 800 ft. Pairs of butt entries at intervals of 300 ft. will be driven off the face entries. The development near the slope bottom will be protected by a 250-ft. pillar on the north and a 300-ft. pillar on the south. The manway adjoins and lies north of the loaded track. Provisions will be made to keep the men off the haulage roads as much as possible. Where it becomes necessary for the men to cross the haulage roads, crossover bridges will be erected. All main haulage track will be laid with 60-lb. rail and the butts will be equipped with 40-lb. rail.

The coal bed dips to the northward and advantage will be taken of this fact in solving the problem of underground drainage. As the main body of coal lies southeast of the slope bottom, part of the limited area to the north of it will be arranged as a sump for water storage. It is believed that most of the mine water will run down the dip to the sump prepared for its reception. The sump will comprise two face entries with as many butt rooms as may be required to accommodate the water. Only one central pumping station will be required in this mine, but auxiliary pumps will be necessary.

The system to be followed in room driving has not been definitely decided. However, the company contemplates using the advance system of pillar robbing, relying on the unusually good roof to aid it in maintaining its pillar line. The overlying sandstone is only a few feet above the roof and possesses a good vertical cleavage running northeast and southwest. By amply protecting the haulageways and driving rooms in the respective panels in one direction only, it is hoped that a well-defined gob line can be obtained when the pillars are being drawn, which will, of course, parallel the line of cleavage of the overlying sandstone. This system has met with success in a nearby mine.

Ultimate haulage arrangements will permit of an uninterrupted flow of one-way mine-car traffic. Loaded trips will cross under the river in the north heading and, on passing to the west of the shaft-bottom, will be switched into the south entry and backed into either one of two loaded-car storage tracks. These tracks are on a slight downgrade toward the shaft. The loaded cars after passing through a rotary dump will be returned empty through the south river tunnel to the Logans Ferry side of the river. A third entry is contemplated on the Springdale side; it will be placed to the south of the empty track, to which it will be connected by roadways, permitting a motor to switch from one passage

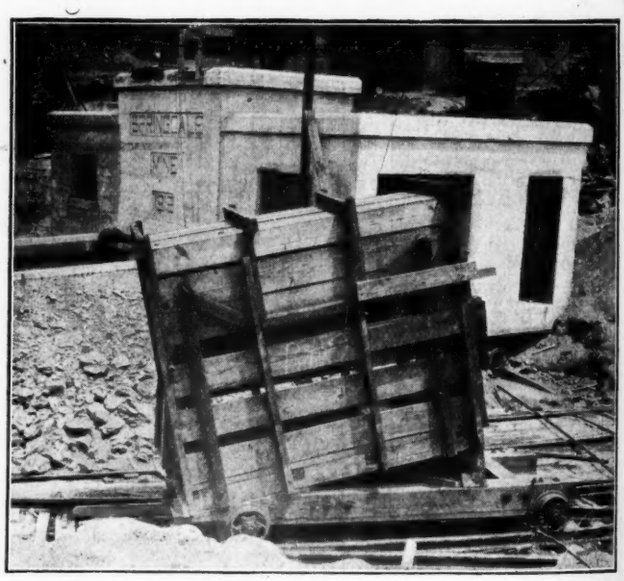


FIG. 6. ANOTHER VIEW OF THE SLOPE WITH ANIMAL CAR IN FOREGROUND

To lower mules down into the mine while the tunnels were under construction it was found best to use a special car which would not tilt them too much out of the perpendicular.

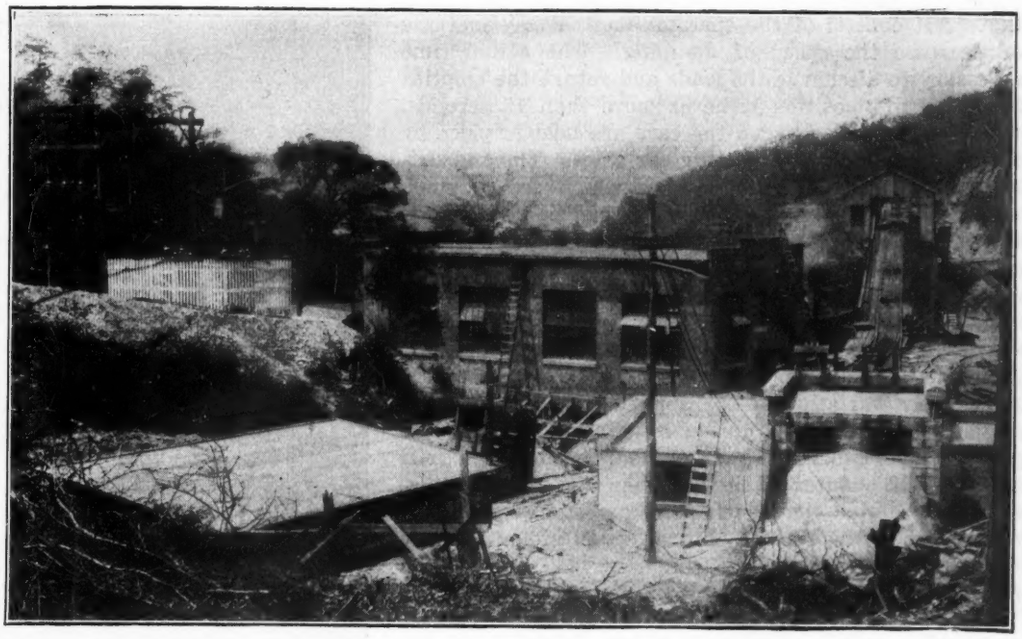


FIG. 7
Slope Head During Construction

Note the temporary tipple in the right rearground and the slope head on the right in the foreground. A fenced-in transformer station may be seen on the left.

to the other without interfering with traffic in the main entries. Locomotives will thus travel from the rear end of a trip of loads on the west of the rotary dump to the head of a trip of outgoing empties on the east of the rotary dump.

At the present time, however, with a limited daily output, only the south heading of the river tunnel is used for haulage. The incoming loads when at a point about 400 ft. east of the shaft bottom switch through a shoofly to the north entry. At a place several hundred feet west of the bottom the trip swings back into the loaded storage tracks occupying the south entry. The motor then returns and picks up a trip of empties that have accumulated on the empty side of the shaft bottom.

The mine cars now in use are of the 100-cu.ft. or 3½-ton solid body type. They have a steel top and wood bottom and are fitted with swivel couplings. This coupling, together with the car haul and control, permits these cars to be dumped while coupled together. A double pneumatic car haul is designed to move a trip through a distance equal to two car lengths after each operation of the rotary dump. This machine is now adjusted to move a trip one car length at a time, as only one loaded car is being discharged at each operation of the dump.

The cars are engaged by two "duck-hook" carriages attached to the piston rods of air cylinders, one being placed at each end of the rotary dump and below the track level. The hooks, which travel in steel guides, engage lugs placed on the bottoms of the cars. The double pneumatic piston arrangement permits each trip to be fed completely through the dump to the empty track. The cylinders are so connected mechanically as to make the pulling stroke of each the return stroke of the other, so that compressed air will be used only for the direct pull necessary to move the cars. This car haul was designed to handle a trip of eighty loaded cars on a grade of 0.75 per cent in favor of the loads. With this grade the entire trip may be started from rest at each operation and in 10 seconds automatically moved ahead two car lengths, thus spotting two loaded cars in the dump.

As was mentioned before, the cars are discharged without uncoupling. An automatic car-control device governs the movement of the cars in the dump and also that of the approaching trip. This is accomplished by means of automatically-operated shoes that arrest the movement of the two nearest cars on each side of the rotary dump. After each operation of the dump the shoes drop below the rail under the weight of the cars which pass over them, and are elevated and held secure after the car haul has reached the end of its travel. The car haul and control are mechanically connected, so that the former in conjunction with the rotary dump regulates the latter.

The dump rotates in a counter-clockwise direction. It is 8 ft. in diameter and will discharge 150 cars per hour. The revolution of the cage is at all times under

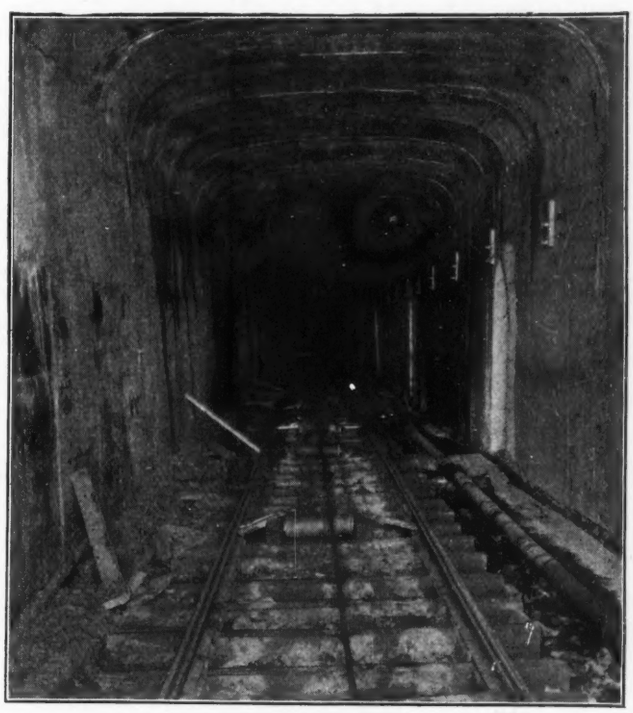


FIG. 8. LOOKING DOWN THE HAULAGE SLOPE
Almost 12 ft. wide and 9 ft. 6 in. high to the springing line, this slope furnishes ample room and headway for hoisting purposes.

the direct control of the operator and he may increase or decrease the speed of dumping. The actual time necessary to discharge the loads and return the empties to an upright position is never more than 15 seconds.

While being discharged the cars are held in place by angles engaging the projecting car axles. The supporting wheels have adjustable boxes which are provided with roller bearings. These wheels can be so adjusted that the alignment of the revolving cage can be accurately and easily maintained. This arrangement also assures an even distribution of the weight. The operating mechanism consists of a gear train giving the desired speed reduction between the motor and the cage. A flywheel attachment on the secondary drive shaft reduces the variation of the applied power to approximately 10 per cent. Rotation is transmitted from the gear train to the wheel path on the cage through friction wheels. After each operation an automatically cushioned stop at the proper point arrests, with a minimum impact, the rotation of the cage, simultaneously releasing the friction-wheel clutches. The rotary dump is actuated by a 10-hp. General Electric induction motor.

Coal is hoisted from the shaft bottom to the surface in Lepley tandem skips, furnished by the Connellsville Manufacturing & Mine Supply Co. Each skip compartment has a capacity of four and one-half tons. The purpose of using a tandem skip is to keep separate the contents of the two cars dumped at one operation.

To enable two cars to be dumped simultaneously, keeping their contents separate, and to be discharged into the upper and lower compartments of the tandem skip at one operation, requires a rather complicated pocket, chute and gate construction. In actual operation, however, this is really quite simple. No attempt will be made to give a detailed description of the construction here, but only a general one covering the path taken by the coal after leaving the dump.

Section B-B, p. 1007, shows the center line of the rotary dump to be askew to the center line of the shaft compartment. This was done for mechanical reasons, involving chute and pocket locations for the upper and

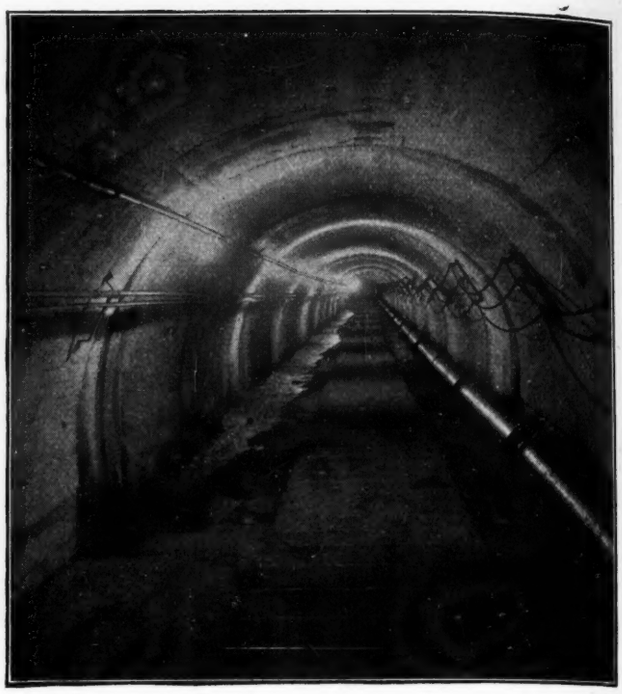


FIG. 9. WAY PROVIDED FOR MINE EMPLOYEES
A well-lighted easily traversed slope with easy stairway. Steel nosing strips on each stair reflect the light and prevent stumbling. They also protect the concrete.

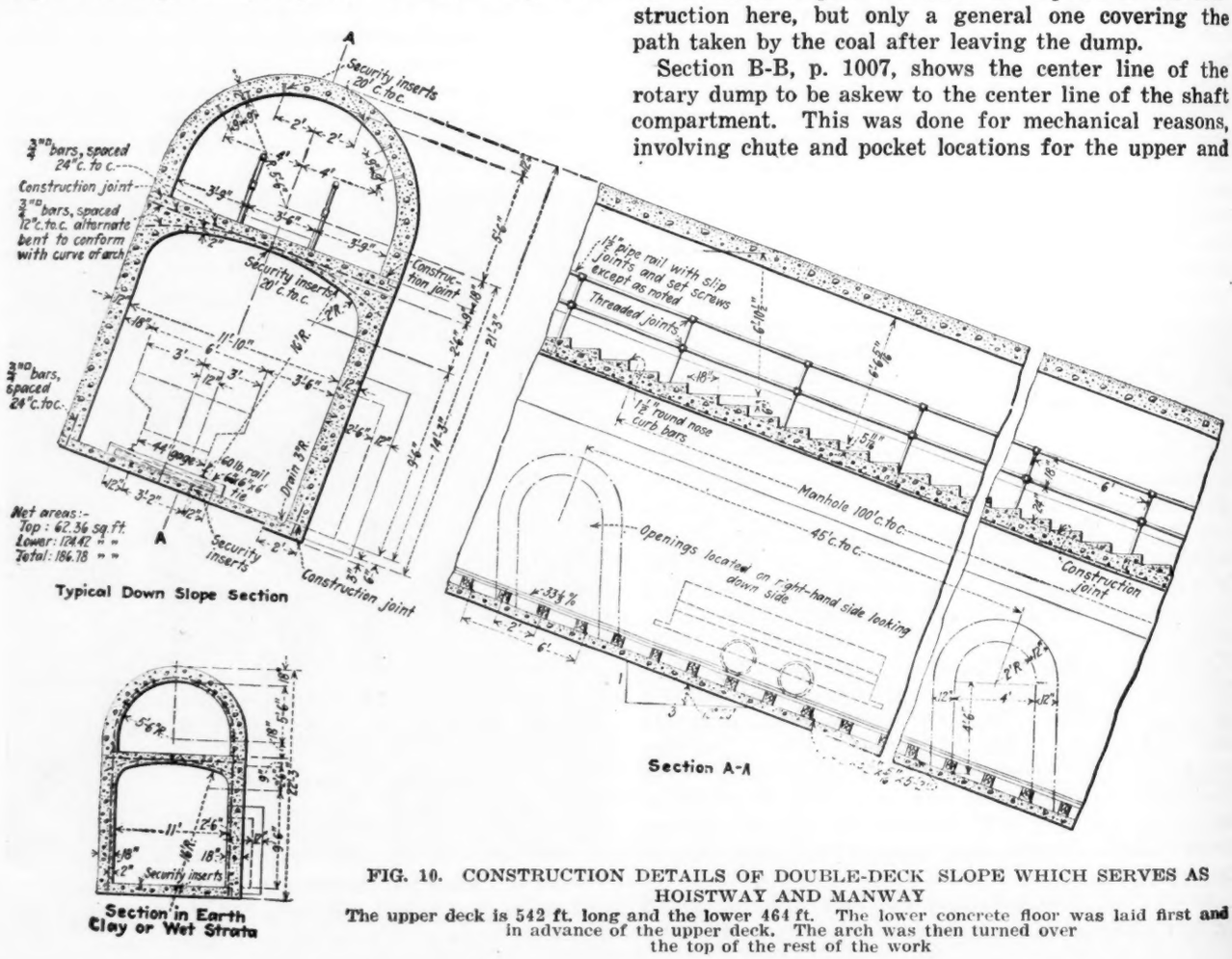

Security inserts 20' c. to c.
Construction joint
Typical Down Slope Section
Section A-A
Section in Earth Clay or Wet Strata
Manhole 100' c. to c.
45° c. to c.
Openings located on right-hand side looking down side
Construction Joint

FIG. 10. CONSTRUCTION DETAILS OF DOUBLE-DECK SLOPE WHICH SERVES AS HOISTWAY AND MANWAY
The upper deck is 542 ft. long and the lower 464 ft. The lower concrete floor was laid first and in advance of the upper deck. The arch was then turned over the top of the rest of the work

lower compartments of the tandem skips. The center line of the shaft compartments extends east and west. Thus the compartment on the right in this section may be designated as the east and the one on the left as the west compartment. The cars on the rotary dump may be designated in a similar manner. In section F-F, which is taken across the shaft looking from east to west, the car section shown is that of the east car. As far as this section is concerned it might be clearer to designate the cars as "near" and "far," respectively. The east, or near, car may be dumped into either one of the upper skip compartments only. The west, or far, car may be discharged only into one or the other of the lower skip compartments, depending upon which is being loaded. This limitation is invariable and must be kept carefully in mind.

Movement of the coal into the upper compartment of the skip will be followed first. Referring to section F-F, the coal upon leaving the east car passes down an inclined chute and is discharged directly to the east or west upper skip compartment by the manipulation of a wing gate. In this section this gate is designated as the upper one and is pivoted at the bottom. If the wing gate is swung away from the reader, a bypass leading to the west upper compartment is closed. This allows the coal to proceed into the east bypass pocket, which remains open.

If the wing gate is swung toward the reader, the east bypass is closed, and the coal moves through the west bypass pocket to the west upper compartment. On leaving the car the coal falls upon a dumping shield that extends down to the top of the concrete chute leading to the pockets. This protects the coal from any great fall when being dumped. The upper chute proper, starting from the top, narrows down from one car length to a double pocket width at its junction with the wing gate. The chutes and pockets leading to the upper skip compartments are naturally on a higher level than those leading to the lower compartments.

Proceeding to the west car and the lower skip compartments and referring to section B-B, it will be seen that the coal on leaving the car moves down a chute toward the east. It descends beneath the upper chute and pockets to a wing gate, where it swerves north toward the lower skip compartments. Here it enters either the east or west pocket, depending upon which way the wing gate is set. Referring to section F-F, if the lower wing gate lies in the plane of the section, it

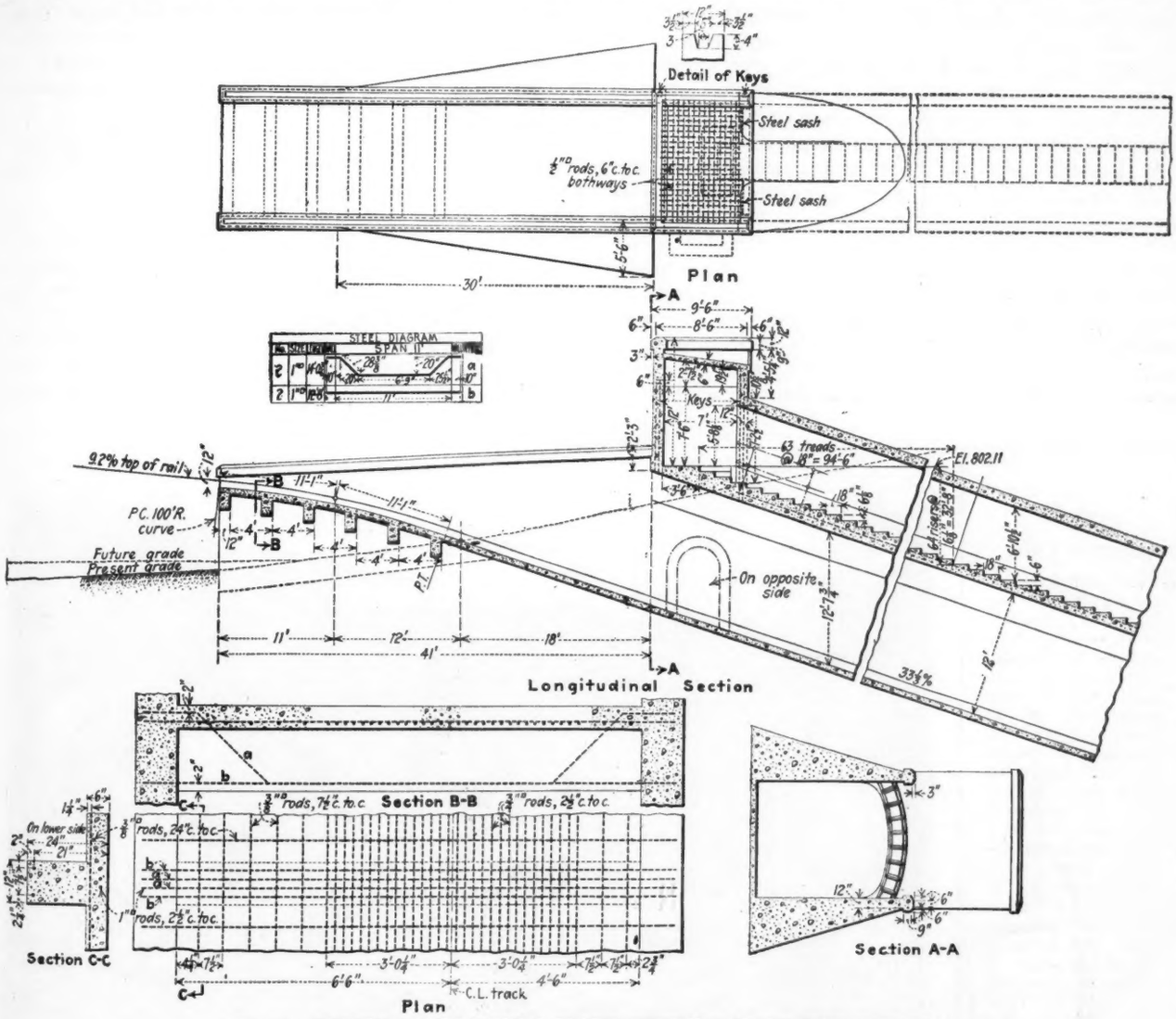


FIG. 11. WHERE DOUBLE-DECK SLOPE EMERGES FROM THE GROUND

Note the care with which the top of the slope is curved off so as to prevent a locking of bumpers and the detracking of cars. The tracks on the slope are completely removed from the manway, so that the dangers too often experienced are entirely avoided. The men do not cross the slope at grade at any point along its course

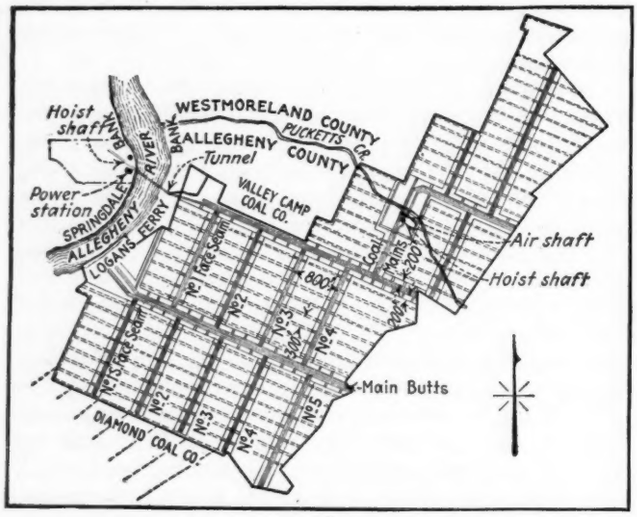


FIG. 12. PROPOSED LAYOUT OF SPRINGDALE MINE

An area of 4,000 acres of Thick Freeport coal will be worked from the Springdale shaft. The advance system of pillar drawing will probably be used. Care will be taken to keep a straight pillar line so that the weight on the ends of the pillars will be evenly distributed.

closes the east pocket and leaves open the west one. The coal therefore proceeds to this compartment. If the lower gate is swung on its hinges away from the reader, it covers the west bypass pocket, and the coal moves toward the observer, swerves to the right and enters the lower east skip compartment.

At present only the lower skip compartments are being loaded. As stated previously, the car haul is adjusted to feed the trip forward one car length for each rotation of the dump, so that each dumping operation turns over a loaded car on the west (the contents of which goes to a lower skip compartment) and an empty car on the east. On the tipple only one coal-handling unit has been installed. This receives the contents of the lower skip compartments. When the mine output increases to a point where the single unit becomes inadequate, another will be installed on the tipple. Space has been provided for the additional unit in the present tipple structure.

As shown in Fig. 14, the chute and pocket construction proper is of reinforced concrete lined with ⅜-in. high-carbon steel wearing plates. Countersunk flat screwhead bolts are used for the attachment of chute hung plates. In general through bolts are used. When this arrangement is not feasible cast-iron inserts are embedded in the concrete for the reception of bolts.

All gates are operated by air cylinders and are counterweighted. The wing gates are built double of ⅜-in. steel plate, reinforced by angle irons and mounted on heavy shafts and bearings. They are controlled by the dump operator by means of four-way valves. Automatic skiploading gates are installed at the mouths of the four pockets. These are provided in order to prevent spillage into the sump.

When a skip lands, the gates leading to it open, allowing the coal to discharge into it. The gates are of the hinged type, so that when open they form a chute from the pocket to the skip. They operate in sliding frames which control the movement of the gates when opening and closing. When in the closed position the gates are locked so that no pressure against them can cause them to open. The air cylinders are operated automatically by the skip, which thus opens the gates when landing at the bottom and closes them as soon as the skip departs on its upward journey. They are arranged at the present time so that only the lower gates open and close. The shaft bottom equipment was furnished by the Car Dumper Equipment Co., of Chicago.

Four men are required at the shaft bottom. The rotary-dump operator has complete control of the discharge of coal from the cars as well as of the manipulation of the wing gates to alternate the coal between the two skips. The rock goes through the same underground loading process as does the coal. One man removes the car checks, dropping them into a tube that discharges them into a check taker on the allotted skip

FIG. 13

Supply Yard

This yard is one of the best in the country for the services it is designed to supply. It is amply drained and covered with granulated slag, making a pleasant footing at all times. The first and third track from the left are for railroad cars and the second, which lies between them, is a mine-gage industrial track. That on the extreme right will be used for the storage of damaged cars preparatory to their removal to the shop.

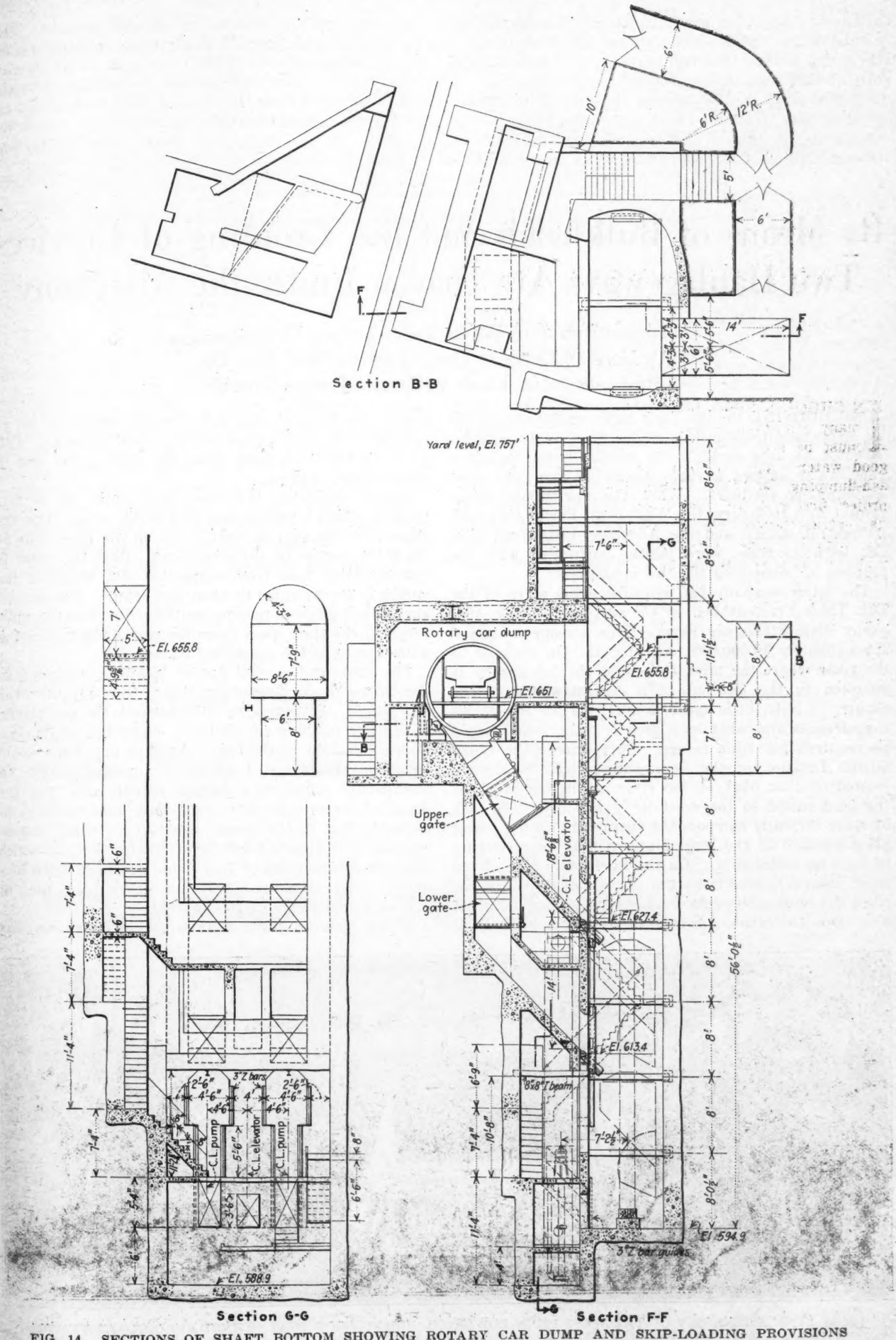


FIG. 14. SECTIONS OF SHAFT BOTTOM SHOWING ROTARY CAR DUMP AND SKIP-LOADING PROVISIONS

and from which they are automatically discharged into a tube on the tipple which delivers the check direct to the weigh house. One man brakes and in general takes care of the trips, and the fourth greases the cars.

Section F-F, p. 1007, shows that the skip-compartment bottom is elevated 6 ft. above the sump bottom, shown on the left. Water and coal spillage reach the elevated bottom from which the water drains into the sump through an intervening wooden grating. The water is pumped from the shaft to the pumping station on the Springdale side of the river by two vertical electrically-driven centrifugal pumps. Periodically the spillage is shovelled from the elevated shaft bottom into an electrically operated vertical bucket elevator, which deposits it into one of the coal chutes above the loading gates of the skip.

By Means of Bulkheads and the Grouting of Crevices Two Haulageways Are Driven Under the Allegheny

Tunnel Fills with Water Twice During Driving — Air Used to Drive It Out—Tunnels Will Not Be Lined—Bulkheads Left in Case of Future Trouble

IN CHOOSING the site for a large central station the many conditions necessary for successful operation must be kept carefully in mind. These include a good water supply, a ready source of fuel and good ash-dumping facilities. When the Springdale power project first took form the West Penn Power Co., with its central station and the Allegheny-Pittsburgh Coal Co., with its mine, were jointly confronted with the problem of connecting the two operations.

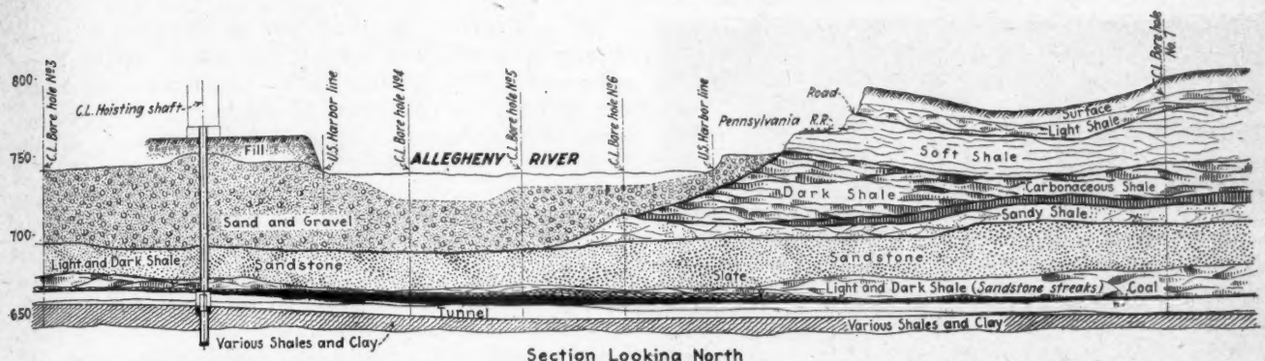
The latter company had acquired 4,000 acres of the 7-ft. Thick Freeport bed on the east side of the Allegheny River at Logans Ferry. This acreage contained approximately 40,000,000 tons of coal. On the side of the river where the mine is located the topography is unsuited to the location of a central station. The country is hilly, little space is available for the dumping of ashes and what level area is to be found would be required for mine refuse. Furthermore the Conemaugh Division of the Pennsylvania R.R. is already located on that bank of the river, occupying much of the land suited to the erection of a plant. The lack of space seriously hampers the operation of a big power plant because of the large water-cooling requirements of such an installation. On the Springdale side of the river, however, conditions are almost ideal. Here the river has built a large flood plain of alluvium. On this side as on the other, a branch of the Conemaugh Division of the Pennsylvania R.R. parallels the river, but at a distance of several hundred feet from its banks. Yet, as is natural to a flood plain, the land is low and in many places swampy.

Above Springdale the river runs south, but at this point it makes a pronounced turn to the west. The site chosen for the central station lies on the lower side of the point formed by the river bend. Here the water is comparatively free from suspended silt, which in the spring is accompanied by sand and débris. The current above Springdale in moving southward is directed, upon reaching the turn, away from the power plant, carrying with it most of the suspended matter.

The mine and central-station locations having been chosen, means of transporting coal from one to the other was sought. Bridging the river between the two plants, in addition to being prohibitively expensive, would complicate handling of the coal. Another expedient would have been to construct an aerial tramway. Such an installation might to a certain extent have met the needs of the present, but would have been entirely inadequate for future needs when the central station reached its ultimate capacity of 300,000 kw., at which time the consumption of fuel would approach 4,000 tons daily. There remained only one other plan, that of driving haulageways under the river.

Before driving these tunnels an investigation was

A. M. LYNN, PRESIDENT OF THE WEST PENN POWER CO., FIRING SHOT THAT OPENED SPRINGDALE TUNNEL



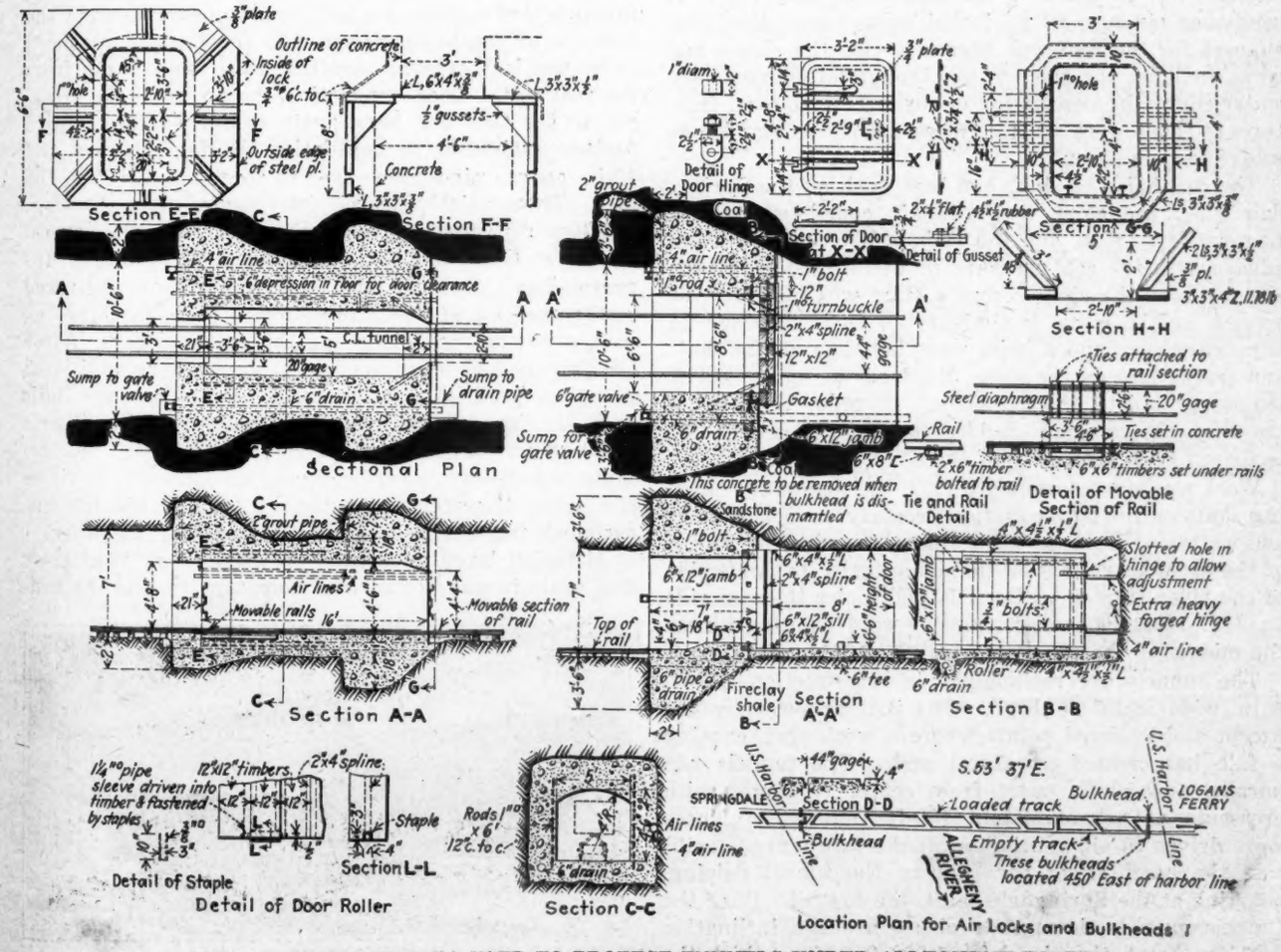
Section Looking North

LONGITUDINAL SECTION OF TUNNELS SHOWING RELATION BETWEEN RIVER BED AND UNDERLYING STRATA

It was hoped that as there was 65 ft. of cover in midstream the tunnel could be driven like any ordinary heading, the coal recovered paying a large part, if not all, the costs of construction. Not so, however; crevices in the roof admitted quantities of water which the pumps could hardly handle. For this reason bulkheads were built at either end of the tunnel, and grout under heavy pressure was used to block the inflow of water.

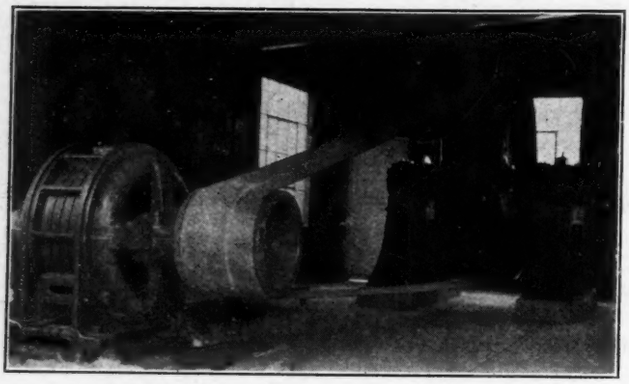
made of those that had been driven under the Ohio River at Steubenville, Ohio, as well as of a pair of tunnels constructed by the H. C. Frick Coke Co. through the Pittsburgh coal bed under the Youghiogheny River near Connellsville. No unusual construction difficulties were encountered in driving either of these roadways. It was found, however, that experience derived from tunnels driven in other seams under other rivers was of little value. Because of its experience and proven ability to perform this class of work, the Foundation Co. was engaged to drive these tunnels.

Preliminary to tunneling, the depth and character of the strata to be penetrated on each side of the river were ascertained by diamond drilling, and a barge outfit was employed to put down three holes through the bed of the stream. The Pennsylvania Drilling Co., of Pittsburgh, Pa., had charge of the diamond drilling. Luckily the coal measure lies at sufficient depth to provide ample support for the roofs of the tunnels. Furthermore, the overlying strata are of such a nature as to render it unnecessary to line the tunnel with concrete. A stratigraphic section through one of the tunnels is shown above. For the most part the two passages split the coal bed, leaving the upper bench of



DETAILS OF BULKHEADS USED TO PROTECT TUNNELS UNDER ALLEGHENY RIVER

Though it was not necessary to construct the tunnels under pressure, air had to be used twice during their driving to force the water back in the crevices. The bulkheads will remain in place for use should a quantity of water enter beyond the power of the pumps to handle, thus threatening the drowning out of the mine.



INDUCTION MOTOR USED AS SPARE TO DRIVE FAN

A 100-hp. General Electric motor will be used to drive the 300,000-cu.ft. Lepley fan should anything happen to the other. At present, as not so much air is required, the fan is driven by a direct-connected 50-hp. motor of the same make. The fan now delivers 154,000 cu.ft. of air per minute at 4 in. water gage, the fan running at 100 r.p.m.

the coal in the roof. In addition, an overlying stratum of slate and certain underlying strata of shales and fireclay were pierced in order to provide the required height of 7 ft. Faults and rolls were encountered in the coal measure, causing much of the tunnel to be driven in rock as it was necessary to maintain uniform grade irrespective of the location of the coal. The sections penetrated were extremely heterogeneous.

On the Springdale side the tunnels do not follow the coal bed but go under it, the coal acting as a roof. A sandstone stratum 28 ft. in thickness forms the chief support for the roof and, together with the shales and clays, excludes the river water, though, of course, some water enters, by percolation or through small local fractures. There were several places where the standstone was extremely porous.

The coal-hoisting shaft had been sunk on the Springdale side, the slope and airshaft completed on the Logans Ferry side, and the main haulage entries were advanced in the coal measure to within 400 ft. of the east bank of the river before a start was made on the tunnels or the work preliminary to their driving. A temporary cage and a hoist were installed at the shaft and tracks laid on the slope, the loads being raised by temporary hoists at each place. In order to expedite the work the company decided that the tunnels should be driven from both sides of the river.

Work was started eastward from the foot of the hoisting shaft on the power station property on Oct. 1, 1920, and westward from the mine side of the river on Nov. 8 of the same year. Actual tunneling under the west side of the river started on Dec. 10, and under the east side on Jan. 15, 1921. Both tunnels were connected near the middle of the river on April 27, 1921.

The tunnels are rectangular in cross-section, 10 ft. 6 in. wide and 7 ft. high. The roof is generally flat except at occasional points where a weak spot, causing a fall, has created a natural arch. The tunnels run parallel and 50 ft. apart from center to center with crosscuts at approximately 100-ft. intervals. These were driven to aid ventilation at the face and to facilitate the handling of cars during the tunnel driving. Starting at the Springdale shaft, the first 600 ft. of the tunnels extends downgrade at an average inclination of 1½ per cent, then level for 1,000 ft., after which the remaining distance rises on a 1-per cent grade into the mine at Logans Ferry. The greatest depth below full pool is about 90 ft.

On account of the small size of the tunnels, practically no bench was carried, the whole section being advanced with a straight face. Jackhamers were used for drilling, the component of the hole depth along the axes of the tunnels averaging 6 ft. Because of the diversity of the strata at the face, no fixed method of placing the shots could be maintained. Where sufficient coal was being penetrated it was undercut by a Sullivan puncher. This machine worked alternately between the two tunnels. Undercutting eliminated much smoke, saved explosives and reduced the concussion due to shooting. It also speeded up the work. Whenever conditions permitted, drilling and undercutting were carried on simultaneously.

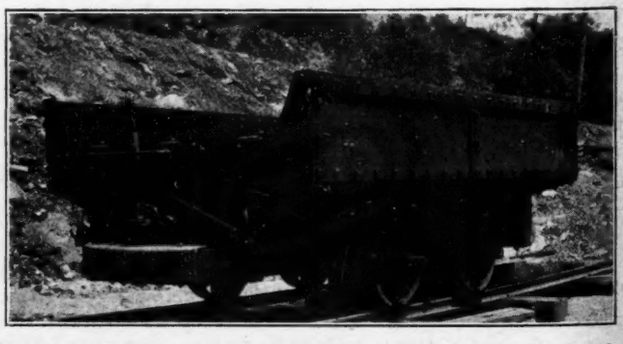
The muck was loaded into the standard 3½-ton mine cars and hauled to the shaft or slope by mules or horses, nine of which were stabled underground. The north tunnel at each end was used for empties and the south tunnel for loads. Thus one-way haulage was maintained, and ample storage room was afforded for both empties and loads on their respective haulageways beyond the crosscut nearest to the face. Consequently the haul from the face to the clear never exceeded 150 ft.

Tunnel Ventilation Aided by Canvas Pipes

Ventilation was provided by force fans placed on the surface at the slope and shaft mouths. As previously mentioned, the crosscuts were driven primarily to facilitate ventilation. One tunnel was used as an intake and the other as a return, all crosscuts except the last one driven being closed. As the tunnels advanced from the last crosscut brattice cloth was hung from the roof to the floor, conducting the air from the crosscut to the face and back again to the surface. As a further assistance to ventilation, Buffalo blowers and 10-in. canvas pipes were used to force air direct to the face. These quickly cleared away smoke after shooting.

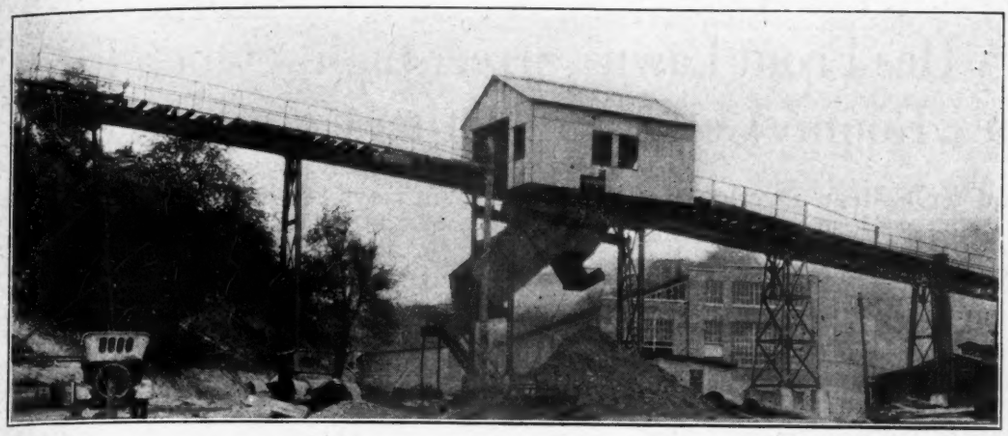
When work first started, water was voided by several air-driven Gould and Cameron pumps; Worthington, Ingersoll-Rand, Sullivan and Hall compressors delivered compressed air at 80-lb. pressure to these machines as well as to the rock drills and the coal punchers. After the driving had progressed to a point where additional pumping facilities were required, chambers were built on both sides of the river and equipped with Harris 1,400-gallon electrically-driven centrifugal pumps. Many water-bearing crevices were encountered; at times the influx of water was sufficient to flood the tunnels, seriously interfering with the progress of the work.

Although large quantities of water were frequently met with, it was not deemed necessary to line the tun-



MINE CAR USED BY ALLEGHENY PITTSBURGH COAL CO.

A car of unusual type, made with protruding axles by which it will be held rigidly while in the rotary dump. One side of the car drops down, thereby making it easier for the miner to load coal at the face.



Domestic Coal Chute

This trestle, which is handy to the double-deck slope on the Logans Ferry side, a half mile distant, delivers coal to trucksters. The combination of steel derrick and steel bent is interesting.

nels with concrete, the water being kept back by grouting. Two diamond drills kept test holes well in advance of the faces. Wherever deep holes had to be driven for grouting, these machines were used for that purpose. It was necessary to install grouting machines and conduct grouting operations almost continuously throughout the progress of the tunnels.

Upon reaching a crevice that produced any undue quantity of water, holes 20 to 30 ft. long were drilled in roof and ribs in advance of the work. Cement was then forced into the strata under a pressure of from 80 to 160 lb. per square inch, depending upon the conditions. Some of the crevices encountered required as many as 15 to 20 holes drilled in the roof into which from 400 to 600 bags of cement were forced before the water was finally shut off. Only large streams of water were sealed off, as the grouting work necessarily interfered with progress.

However, grouting operations have been carried on continuously since the tunnels were connected and highly favorable results have been obtained. One large crevice encountered in the second crosscut from the east side of the river, 250 ft. from the harbor line, could not be sealed off by this method alone on account of a pronounced fault in the coal measure and the overlying strata. This crevice has since been entirely closed by sealing the crosscut with mass concrete and by subsequent grouting of the crevice in the usual manner.

The tunnels will have to be reasonably dry to permit of the satisfactory operation of the electric haulage locomotives as on the fitness of this part of the roadway the success of the mine must depend, for all the coal must be hauled through the tunnels to the shaft bottom. In places where bad roof was encountered it was found necessary to use 10 x 10-in. oak caps and legs, placed on 2- to 4-ft. centers. In this part of the work blasting had to be light in order to avoid shattering the roof.

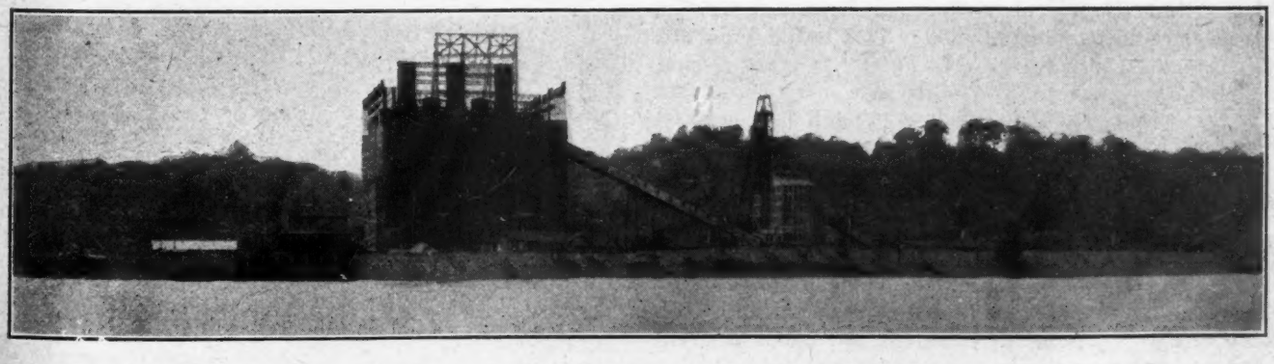
In driving the north tunnel an abandoned 8-in. salt well was encountered about 150 ft. from the west bank of the river. This caused a sudden inrush of water. The upper and lower sections of the hole were finally closed by jacking wooden plugs into both the openings. This work was supplemented by drilling holes and grouting.

Emergency concrete bulkheads were built at the harbor lines in each tunnel on both sides of the river. These are provided with doors built of 12 x 12-in. oak supported on rollers at the bottom, enabling them to be closed quickly in case of flood. It was necessary to close them twice during the driving of the tunnels. In both instances compressed air was used to blow out the water. These doors will remain as part of the permanent installation.

Thirteen Men in Each Working Place

Driving operations were carried on in two 10-hour shifts. At each of the four working faces a crew of thirteen men was maintained. This was composed of one shift boss, two drillers, two drillers' helpers, six muckers, one mule driver and one blaster. Edison storage battery safety lamps were used in the work. Because of the possibility that gas would be emitted by the coal seam, permissible dynamites furnished by the Aetna Explosives Co., were employed in blasting. Working places were examined daily by fire bosses and examinations also were made both before and after shooting the faces.

Due credit should be given to the engineers for the accuracy maintained in driving the tunnels, which met exactly on the lines predetermined. The results attained are worthy of commendation inasmuch as the engineers had to work from a 7-ft. baseline. As with the tunnel lines, no change in the grades as originally planned was necessary. During the entire operation no serious accident occurred. The work was brought to a successful completion when on April 27, 1921, both headings were simultaneously connected by a blast fired at the surface by A. M. Lynn, president of the West Penn Power Co.



Logans Ferry Has Front Lawns, Street Lights, Open Fires, Lined Flues, Roomy Cellars and Other Conveniences

Location on Plateau Overlooking Allegheny—Chimneys Set on Base Below Cellar Floor Will Accommodate Laundry Stove—Cellar Serves for Storage, Laundry and Washroom—Main Streets to Be Paved

THROUGHOUT the construction of the Springdale power station of the West Penn Power Co., development was simultaneously prosecuted on the Springdale mine of the Allegheny Pittsburgh Coal Co. When preliminary operations had been brought to the stage where actual development began, more miners were required. It devolved upon the company, therefore, to provide suitable quarters for its employees. The labor camp thus gave way to a community, and the village of Logans Ferry sprang into existence. The laying out and building of this village began in the autumn of 1920.

This community is readily accessible. Located across the Allegheny River from the central power station and just north of the mine, it lies within a short distance of the towns of Parnassus and New Kensington, both of which are fairly populous.

On the river bank the Alleghany Valley division of the Pennsylvania R.R. is within a stone's throw of the village of Logans Ferry. This furnishes excellent transportation facilities, as fifteen passenger trains en route to and from Pittsburgh make daily stops at this point. The Pittsburgh-New Kensington macadamized county road passes the village, paralleling the railroad. A few miles to the north and east this highway connects with a network of other good roads leading in all directions.

Village Site Has Been Carefully Chosen

The location of the village is no more remarkable than the natural advantages of its site. A road branching from the county highway runs east a short distance past the mine plant, and then rises by a sharp reverse bend to the southern end of a 22-acre plateau upon which the village has been built. A made-to-order site could possess no better attributes than does this one. If one imagines a conical hill with a large, somewhat elongated base to be truncated approximately 100 ft. from its bottom, a good conception of the topography of the village may be obtained. The ground on which the town is built required practically no leveling.

The west slope, bordering on the river, as well as that on the southern side, is steep. It is covered with a growth of young timber that shelters the village from the winds which sweep the valley in the winter time. If this timber were cut down an unobstructed view of the river could be had for miles. This would show not only the central power station with its transmission lines and towers, but also scattered industrial plants and factories. These are, however, well hidden; and the view in another direction discloses distant rolling hills, dotted by a few small towns and variegated by farm lands.

Although the village adjoins the mine plant it is completely isolated from it by reason of its high elevation and the step-off slope. Tablelands of this medium elevation and regular shape are rare in the hilly sections of Pennsylvania and especially in regions adjacent to mines. The advantages of the townsite will have an important bearing on problems involving the procurement and retention of efficient workers. Work will be steady as the demand of the central power station for coal will be constant. The mine workers will be able to forget about the mine during their free hours and will be confronted with beautiful scenery rather than a view of the waste land, unsightly buildings and desolation not infrequently found about mines. The resulting psychological effect ought to manifest itself in greater contentment and efficiency.

Elongated north and south, parallel with the river, a spur extends outward from the village on its eastern end. The land falls away gently to the east of the present site, so that plenty of room is available for future expansion. The village is laid out in regular blocks. Four main streets extend in the direction of the town's greatest linear dimension, and two side streets cross these at right angles. The houses are built upon lots with 60 x 100 ft. as approximate dimensions. They are not placed on the sidewalk line, but are set back 10 or 15 ft. from it, leaving room for a front lawn and sidewalks.

Ninety-nine houses have thus far been built. These include five general types for miners and two types for foremen and other bosses. No double houses have been built. All the dwellings are electrically lighted. Sundry details affecting the shapes of the houses and porch roofs have been varied, without, however, affecting the interior arrangements of the respective types. No two houses of the same character have been placed in proximity to each other, so that, with the alterations indicated above, one has difficulty in discovering two dwellings having the same floor plan.

Various paint schemes also have been employed to

EIGHT-ROOM FOREMAN'S HOUSE

The finish of this house is in many ways superior to that found in frame houses in the city. It has modern conveniences and hardwood floors.

INTERIOR FLORENCE TYPE OF BUNGALOW

This is a view seen when looking from the dining room through the large doorless archway into the living room, which might be regarded as a sort of reception hall. The rooms are neatly wainscoted and the door is panelled and has lattice lights.

further diversify houses of the same type. Twenty different color combinations have been resorted to. The tints employed include white and various shades of brown, gray, green and yellow. Green, red or gray slate-surfaced asphalt shingles are used for roof covering.

Coal companies are fast forsaking the old stereotyped variety of miners' dwellings with uniform design and color scheme. This trend is undoubtedly beneficial. Diversity in the construction of dwellings exerts a good influence on their occupants. Where some degree of choice is possible each tenant believes that his selection is the best. He accordingly takes pride in his premises and will try to maintain or even improve their appearance in one way or another.

Every house in this village has a cellar under its entire floor area. The 8-in. solid foundation walls are of concrete with four window openings and one doorway, this furnishing the only means of access to the cellar. The basements are 6½ ft. high in the clear, and the tops of the foundations rise approximately 3 ft. above the ground level. Most of the cellars have only a single compartment, but a few contain two. The brick chimneys rest on a concrete base below the level of the cellar floors. One chimney flue extends down into the basement with an opening for a laundry stove.

Two concrete pillars have been built in each basement for the intermediate support of the joist load. The cellar adds much to the roominess of the house. It may serve the purposes of storage for vegetables and other edibles, yet at the same time it may be used as a laundry. The importance of a good cellar under miners' dwellings should never be overlooked. The miner's family will find innumerable uses for it. Where a washhouse, for instance, is not available at the mine, the miner may conveniently use his cellar as a change quarters.

Chimney construction is practically the same in every house, with only slight variation in the arrangements in the different types. Realizing that approximately 90 per cent of all fires in miners' dwellings are the result of defective chimneys, the company decided to minimize the fire risk by good chimney construction. The inner faces of the usual brick construction are lined with a special flue of fireclay tile. Most of the houses are provided with one or two open-grate fireplaces in addition to the usual flues for the accommodation of stoves.

Plaster Board Used on Interior of House

The company first purchased seven houses of the ready-cut six-room Florence type from the government. These were erected during the summer of 1920 to meet the first housing requirements. In this bungalow type 2 x 8 in. joists were used in the floor, 2 x 6 in. joists for the ceiling and roof, and 2 x 4 in. material for studding. The floors are double 1 x 4-in. tongued and grooved flooring boards, being placed upon 1 x 8-in. sheeting, laid diagonally. The outside walls consist of 1-in. sheeting, over which weather boards are laid with paper between.

On the interior of the shelter walls plaster board is nailed to the studding from floor to ceiling, but on the partition walls only the upper portion of the surface is covered by this material. A wainscoting of light matched boards covers the lower portion of the walls of all rooms. The plaster board is covered with a rough mortar and a finishing plaster coat. The exterior color schemes are dignified and pleasing. Thus one of the houses of this type has, say, a light buff body, a medium brown shade for the doors, white trimmings, and a green asphalt-shingle roof. Painting on the interior is drab gray for the wainscoting, natural color for the plaster, and brown trimmings. This type of house, in addition to being well constructed, is spacious and presents a good appearance both inside and out.

Ninety-two houses were built on contract. The superstructure of these dwellings is of practically the same construction as that of the government type. The outside walls, however, are not covered with sheeting, weather boards only being used, with a lining of heavy building paper. The interior is finished with lath and

Row of Bungalows

Ninety-two houses have been built in addition to the seven ready-cut Florence houses. Every house has a cellar under its entire floor area which is 6½ ft. in the clear. The foundations stand about 3 ft. clear of the ground.

wood-pulp plaster troweled to a smooth surface. The floor consists of a single thickness of 1 x 4-in. matched yellow pine.

The five-room type of dwelling is provided with a small room that will constitute the bathroom at a later date when the proposed sewage and water systems are installed. The bedrooms are provided with clothes presses, the dining room has a built-in china cupboard equipped with drawers in the lower half, and the kitchen has a small utensil cupboard. The living room is provided with an open fireplace finished off with a wood mantelpiece.

Three types of four-room houses have been built, one with and the other two without the unequipped bathroom. The superintendent's and foremen's houses are of two-story type containing six or eight rooms with a finished attic. The floors and interior finish are of oak on the lower floor. Hot-air heaters, running water, a bath, and all inside conveniences are provided, including laundry tubs in the basement. The sewage flows to a battery of five septic tanks located some distance away from the houses. The miners' dwellings have outside coal houses and closets of two compartments, there being one closet for every two dwellings. The fecal matter in each case is deposited in a double-battery concrete septic tank. The R. L. Byrum's Sons Co., of Wheeling, W. Va., erected the contract dwellings. The septic tanks were furnished by the Cement Products Co., of Wilmington, N. C.

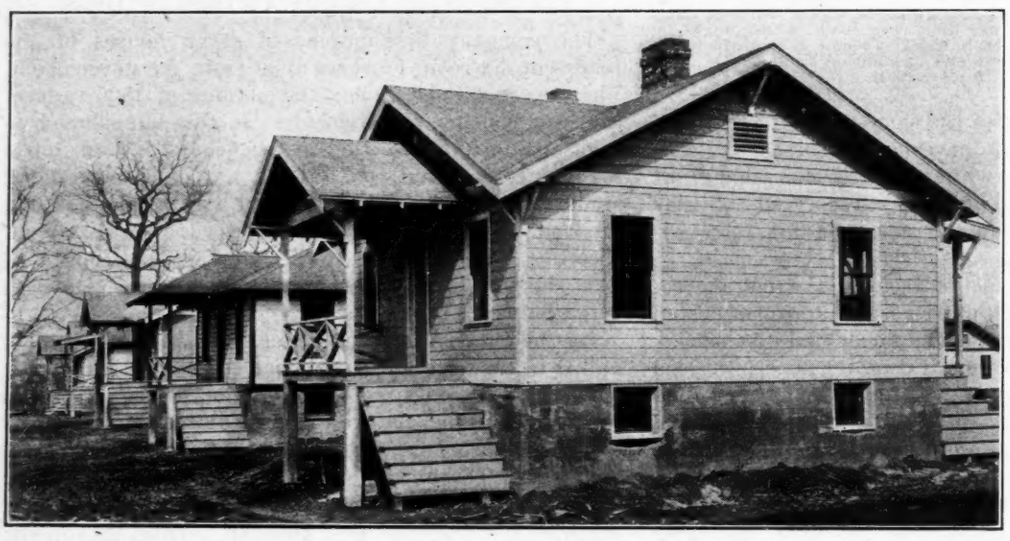
It is the intention to install a sewage system later. This will be greatly facilitated by the high elevation of the townsite, which even now effects natural drainage that prevents the accumulation of stagnant pools. Waste water thrown out from the houses is at present removed by temporary surface drains, so that little chance is offered for germ breeding. Even without a sewage system this village is a healthy place.

For the present the streets are being surfaced with broken sandstone and other suitable material. The company proposes to pave the main streets, construct sidewalks and improve the layout in general. Poles are found on all streets of the village, carrying electric lines for the dwellings and also for street lighting. The town is well illuminated at night, for in addition to the street lighting system every porch is provided with a suitable light.

Water is supplied by five wells, two of which are equipped with motor-driven deep-well pumps, while three are hand pumped. A small elevated tank is now being used for water storage and a 10,000-gallon elevated storage tank is in course of construction. Street hydrants are located at convenient intervals throughout the village. Later the company intends to bring its water supply from the filtration plant of the central power station across the river. The water will be pumped through a main laid through the river tunnel and thence to the storage tank. For the time being four small chemical fire-fighting tanks on trucks are stationed at different points in the village. Next spring pipe lines for the purpose of protection in the event of fire will be laid as part of the permanent water system.

Thus far nothing has been said concerning community life. The village is too young to have had an opportunity to develop in this direction. A three-room temporary school has been started in a frame building. This will meet the needs of the village until the permanent school is erected. The contract has been awarded for a modern brick school house in which provision has been made for eight grades. This building also will include a large assembly room and a gymnasium. There are no churches in the village. Churchgoers need walk only a short distance to reach either of the adjacent towns, where they may attend the divine services of their respective creeds. The big problem at present is to make public improvements in the shape of streets and the like. These must, of necessity, precede the erection of recreation halls and similar edifices.

As a village Logans Ferry is among the best of mining towns; as a community it eventually should rank equally high. This will depend, however, upon the type of people making it their home. Because of the location of the town and its attractiveness and because of the almost certain steady operation of the mine it is believed that only those people will be retained who are good workers and good citizens, capable of putting forth conscientious and effective efforts.



Avoidance of Similarity

With care and judgment the individuality of the houses has been successfully maintained. Adjoining houses are never duplicates either in shape or color. The asphalt shingles may be green, red or gray. The body color and trimmings also are varied. Thus the inherent similarity of design entirely escapes the observer.

THE CITY OF PRINCETON, IND., is one of a number of municipalities in the United States directly situated over workable coal beds. The problem of extracting the coal with the avoidance of serious damage from surface subsidence has been made the subject of an investigation by the Bureau of Mines.

Problems of Operating Men

Edited by James T. Beard

Zinc Chloride as a Wood Preservative

Claim of Little Resistance to Solvents Yet to Be Proven—Numerous References to Results of Zinc Treatment—Corrosive Effect on Iron Disputed—Manufacture of Zinc a Great Industry

MY ATTENTION was recently called to an interesting article that appeared in *Coal Age*, Nov. 17, p. 793, regarding the use of different preservatives to increase the strength and life of timber, besides rendering it more resistant to fire.

Of special interest was that portion of the last paragraph on page 793, which reads as follows: "It (zinc chloride) does not resist the action of solvents and is decomposed in the presence of lime in the soil. It can be used only in places that are permanently dry."

Allow me to state that, in my opinion, the question of zinc chloride offering but slight resistance to the action of moisture and water is, as yet, wholly a matter of conjecture, as the fact has not been definitely proven. Indeed, a paper prepared by C. H. Teesdale and S. W. Allen, appearing on page 222 of the 1919 Transactions of the American Wood Preservers' Association, describes some tests that prove the contrary of such claim.

Again, we find, in the 1916 Transactions, page 181, that the Committee on Specifications, while suggesting zinc chloride treatment for "arid and semi-arid regions" and deprecating the same "in situations where the treated timber is in permanent or intimate contact with either stagnant or flowing water," adds, "since there are conflicting data regarding the leaching of zinc chloride from timber, and since reliable statistics regarding its value in moist climates are not available, we would strongly recommend that definite service tests be made, by the association, in the Southern and Eastern States to determine the actual life of zinc-treated materials in humid conditions."

Sentiment Veers to Zinc Treatment

More recently, wood-preserving engineers have been slowly swinging around to the opinion that zinc-treated ties should give as good service in wet climates as creosoted ties. Reliable information in this regard, however, will not be available for from three to five years longer.

The paragraph next following the one to which I have referred reads: "Pine ties impregnated with zinc chloride lost from 80 to 85 per cent of the original salt, three years after impregnation; and beech ties, under the same treatment, lost from 90 to 95 per cent."

In my search of literature on this subject, I have not been able to find any reference to such large losses. On the other hand, on page 75 of the 1915 Transactions of the Wood Preservers' Association, there appears a description of tests made by F. J. Angier, under most rigid conditions. It is there stated that he only succeeded in leaching out a maximum of 30 per cent of the original zinc chloride, from the timbers tested.

On pages 77, 78 and 79 of the same Transactions, will be found statements confuting the notions so largely prevailing, in regard to the alleged corrosive effect of zinc chloride on iron. In addition to what is said in those references, we can state, as manufacturers of zinc chloride and accustomed to shipping this solution in tank cars and iron drums, that it is our experience that the only corrosive action occurs when the solution is slightly acid or, in other words, contains minute quantities of zinc chlorate. Solution prepared from fused zinc chloride never contains any chlorate.

Regarding this point, the Forest Products Laboratory remarks: "The consensus of opinion, among those who claim experience, seems to be that if the zinc ties are properly seasoned before being placed on the track, the corrosion is of no appreciable consequence."

Vegetable Fiber Uninjured

In reference to the damage to vegetable fiber caused by zinc chloride, Dr. H. B. Luther, Massachusetts Institute of Technology, has proven that specimens stored at ordinary temperatures "show no appreciable difference in strength, between treated and untreated timbers."

In view of this and other testimony, I feel that the observations made in the article to which I have referred, are of undue breadth. As a representative of an industry that provides 35,000,000 lb. of zinc chloride, per annum, to the wood-preserving industry, I regard it as a matter of fairness that these statements should be corrected or at least qualified.

FRANK G. BREYER,
Chief of Research Division,
The New Jersey Zinc Co.
Palmerton, Pa.

Slab Mining in Room-and-Pillar Work

Greater Efficiency in Mining and Loading Coal from a Continuous Face—Better Facilities for Ventilating, Haulage and Concentration of Work—Cost of Timber Increased

ATTENTION is again drawn to the need of providing a greater length of coal face where coal loaders are employed, in the description of the American system of mining given by M. Martin in *Coal Age*, Oct. 13, p. 589.

The system described by Mr. Martin, however, is essentially the same as that formerly described by Carl Scholz in *Coal Age*, Vol. 19, p. 261. Both of these systems come under the general head of slab mining.

Briefly described, they consist in driving pairs of entries across a block of coal between two pairs of cross-headings and separated by a solid pillar of coal. In the American system described by Mr. Martin these pillars have a thickness of 50 yds. The distance between the cross-headings is 500 ft. This leaving a 50-ft. pillar for the protection of the heading gives a coal face 400 ft. in length.

In general, it can be remarked that this system of working out the coal by slabbing presents features that promise greater efficiency both in the mining and the loading of the coal. A mining machine is used to undercut the coal and this is followed by a coal loader capable of loading 150 tons of coal per day, in a 6-ft. bed. Certain types of these loaders are designed to work in seams less than 30 in. in thickness.

Without a doubt, as long as this method could be maintained, good results would be accomplished in ventilation, haulage and concentration of work. In working out a width of 75 ft. on each side of a pair of entries, as in this case, where the coal pillars are 150 ft. wide, it would seem that the cost of timber would be greatly increased. As each cut is made, the track is moved forward to be in readiness for the following cut.

In a previous letter appearing in *Coal Age*, Aug. 25, p. 301, I have offered a

few comments on the method suggested by Mr. Scholz, which apply equally well to the method now described by Mr. Martin. It will not be necessary to repeat here what was said in that letter, further than to say, that, in the method I advocated, I would use a double-track system, one track being between the coal face and the chocks, and the other between the first two rows of chocks, which should have been shown in my drawing.

This will give ample opportunity for handling the loaded and empty cars and the conditions would, I believe, be more favorable for maintaining a constant car supply and causing less delay in the work of loading the cars, than in either the method of Mr. Scholz or Mr. Martin.

Linton, Ind. W. H. LUXTON.

Is a Loose-End Shot a Shot Off the Solid?

Loose-End Shot Not a Shot Off the Solid—Many Regard It So in the Literal Meaning of the Pennsylvania Law—Mining a Shot or Shearing the Same Only Creates a Loose End

REFERENCES to solid shooting, recently made in *Coal Age*, recall to my mind the previous discussion of the question, whether a loose-end shot was a shot off the solid, in the meaning of the Pennsylvania Bituminous Mine Law. I am in entire accord with all the reason and logic contained in the argument presented by I. C. Parfitt, in his excellent letter, *Coal Age*, July 28, p. 142.

A strict literal interpretation of the Pennsylvania bituminous law will not, I believe, support the view taken by Mr. Parfitt and which I believe is correct. Unfortunately, moreover, at least a few of the mine inspectors of the state and most of the insurance inspectors in that region hold to this strict literal interpretation of the law, and consider that a loose-end pillar shot is a shot off the solid.

LAW DEFINES "PROPERLY MINED"

As the law reads, it requires that the coal shall be "properly mined before it is blasted," and defines the words "properly mined" to mean that the coal shall be "undercut, centercut, topcut or sheared by pick or machine."

As it is not customary to mine a loose-end shot, it is argued by some that such a shot does not conform to the requirement of the law and is, therefore, a shot off the solid, which the law is aimed to prohibit, believing the practice to be dangerous, in the mining of bituminous coal.

Practical mining men well know that a loose-end pillar shot has at least as much show to perform its work as a shot in a solid face of coal after being undercut, centercut, topcut or sheared in the manner prescribed by law. In other words, a loose-end shot is in the same category with a shot that has been "properly mined."

Mr. Parfitt has argued further that, after a room or breast of coal has been sheared or sidecut and one shot has been fired and loaded out, there is formed a loose end for the next shot, which then really has a better chance than the first shot to perform its required work. These are thoughts worthy of consideration.

In a more recent letter, Oct. 20, p. 645, one who signs himself "Safety First" takes exception to the argument presented by Mr. Parfitt and embraces the idea that a loose-end shot must be mined to conform with the requirements of the Pennsylvania law.

Now, let us be reasonable. The only thing that the mining or sidecutting of a shot accomplishes is to create a loose end. That being the case, I ask, why is not a loose-end shot, having all the requisites accomplished by mining and sidecutting, equally as safe? Let someone tell us.

In conclusion, let me say that I agree with the statement, already made by my friend, that the way out of the difficulty is to amend the Pennsylvania law, in this respect, and make it read as he has suggested: "No blast shall be fired without the coal is first mined or sidecut, or there exists a loose end that will give the charge an opportunity to perform its work."

Solid shooting, as such, should be condemned and not permitted in the mining of soft coal. If the bituminous law was revised in the manner suggested, there could be but one interpretation given to its meaning and the present confusion would not exist.

EDWARD H. COXE.

Brownsville, Pa.

Difficulties of Uncertified Men

Decries Calling Certification of Mine Officials "Harmful"—Work of Examining Boards Upheld — When a Man Ceases to Study, Who Is to Blame? — Certificate Is Competent Man's Passport.

IT WAS with much surprise that I read the letter of former District Mine Inspector John Rose, *Coal Age*, Oct. 27, p. 684, in which he states he sees "no need of certifying the mine superintendent" and, further, regards the present system of granting certificates, in his state, (Tennessee) as "far from beneficial."

Not knowing Mr. Rose personally, I am forced to conclude that, either the manner of conducting the examination of mine officials in Tennessee is very different from that pursued in the bituminous fields of Pennsylvania; or our friend is manifesting poor judgment in making some of the statements contained in his letter.

In describing conditions in Tennessee, Mr. Rose states there are many certified men acting as mine foremen and firebosses in that state "who have never looked inside of a mining textbook or read any mining journals since receiving their certificates." I surely agree with him when he says that "the mere possession of a certificate does not prove that the holder is competent to take charge of a mine and operate the same safely and efficiently," which is the truth.

We must also admit that many men on securing their certificates cease to study and to read mining literature to keep themselves abreast of the times. That is the case, to a greater or less extent, everywhere. Therefore, let me ask, who is to blame? Certainly not the examining boards who granted them their certificates after due examination.

In justice to our examining boards in this bituminous region, I will say they are almost without exception reliable, practical men, and wholly unworthy of most of the unjust criticisms made of their work, by some writers. Speaking of the examinations held in his own state, our friend says they are "seldom calculated to determine the practical fitness of the candidate." The same is not the case in Pennsylvania.

DEMAND FOR CERTIFIED MEN GROWS

Although the present bituminous law permits a man to act, in an official capacity underground, without a certificate, the fact remains that the first week in April, each year, sees notices posted at all the mines, stating the time and places where the examinations will be held. This is not because of a scarcity of uncertified men, as some would claim; but because of the growing demand for mine officials who hold certificates.

Notwithstanding the fact that the Pennsylvania law makes uncertified men eligible for appointment to positions of trust underground, the difficulties of uncertified men who aspire to such positions are daily growing greater. In all my travels over the best coal-mining fields in this state, I can truthfully say that I have never seen a successful uncertified mine official, from the company inspector down to the youngest fireboss in the mine.

In closing, let me say that there is one feature of the certification law that should not be overlooked. When a man leaves his company where he has worked a long period and where his qualifications are known, and seeks work elsewhere, perhaps in another state, the certificates he holds are his passports. Without these, it would be useless for him to tell strangers of his success in managing and operating mines.

In most cases, the certificate granted by an examining board, in the same or another state, will prove a stronger endorsement even than a letter of recommendation from a man's former employer. The certificate is generally regarded as devoid of the personal element that attaches to a letter of recommendation from an employer.

Consider, for a moment, an uncertified man applying to a strange company

for a position as mine foreman or fire-boss. The first question put to him is, "What certificates do you hold?" As might be expected, the general manager or superintendent, after asking a few ordinary questions, turns again to his desk with the remark, "No, we have enough bosses just now."

No one claims that the certificate makes a man better; but few will deny that the study necessary to acquire a certificate honestly, makes the holder a more efficient worker. It is clear to the observer that, while the lawmakers in Pennsylvania may have made a mistake in revising the certification law, our operators are not making the mistake of availing themselves of the privilege granted them in the law.

Mayport, Pa. JAMES THOMPSON.

Clearing Gas from Headings

To avoid withdrawing men working on return side of headings filled with gas, overcast the air into the main return air-course whenever practicable.

REFERRING to the inquiry of "Bratticeman," regarding the best method of clearing a pair of headings when filled with gas, *Coal Age*, Oct. 13, p. 587, allow me to suggest a case where it would be practicable to remove this gas from the heading, without first notifying and withdrawing the men working on the return side.

In reply to this inquiry, the editor has given the only safe method that could be employed in the case there described. In that instance, the two headings are driven to the rise of the gangway, which is the return air-course, and it was necessary, as stated, to notify and withdraw all the men working on the return side of the headings, before taking any steps to remove the gas.

My purpose in writing, however, is to draw attention to a plan that is often adopted of overcasting the gas-charged air and conducting it at once into the main return airway. Of course, such a plan can only be adopted where the headings are driven off the intake.

In that case, however, it is evident there would be a great advantage in constructing a temporary overcast at the mouth of one of the headings and carrying the air through a crosscut into the main return, instead of permitting it to course through the mine and being obliged to withdraw the men before so doing.

Such an overcast is readily constructed with canvas, by any expert bratticeman. At the same time, it will be necessary to hang a canvas across the air-course, just beyond the heading, so as to deflect all the air, or the major portion of it, into the heading, until the gas has been removed.

A good plan is to perform this work gradually, removing the gas by degrees from the headings, instead of bringing the entire current to bear on the gas at once. BRATTICEMAN.

———, Tenn.

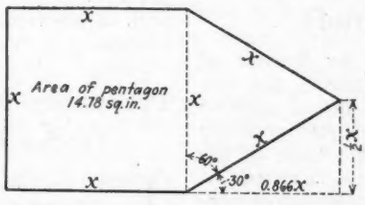
Inquiries Of General Interest

Mensuration

PLEASE show the solution of the following problem: A pentagon is formed by an equilateral triangle joined to a square on one of its sides, as shown in the accompanying figure. If the total area of the square and triangle combined is 14.78 sq.in., what is the length of one of the equal sides of the pentagon? STUDENT.

Knoxville, Ia.

The triangle being equilateral and joining the square on one of its sides, makes the pentagon equilateral. Then,



POLYGON AND ITS DIMENSIONS

calling the length of any one side (x), the area of the square is x^2.

Again, the triangle being equilateral is also equiangular; and, since the sum of the three angles of a triangle is always 180 deg., each angle of an equilatral triangle is 60 deg. The altitude of this triangle, therefore, is found by multiplying one of its sides by the sine of 60 deg., which is 0.866, making the altitude $0.866\ x$.

Now, the area of the triangle is equal to its base (x) multiplied by one-half its altitude ($0.433\ x$), which makes the area, in this case, $0.433x \times x = 0.433\ x^2$. Finally, the sum of the areas of the square and the triangle, which is the area of the pentagon is

$$x^2 + 0.433\ x^2 = (1 + 0.433)x^2 = 1.433\ x^2$$

Therefore, the area of the pentagon being 14.78 sq.in., we have $1.433\ x^2 = 14.78$; and $x^2 = 14.78 \div 1.433 = 10.314$; and $x = \sqrt{10.314} = 3.2$ in. Each of the equal sides of the pentagon is, therefore, 3.2 in. long.

Examination Questions Answered

Miscellaneous Questions

(Answered by Request)

QUESTION—*At firing time, would you slow your fan or keep it running at its normal speed?*

ANSWER—The general belief is that a fan ventilating a mine should not be slowed down at the time of firing shots in the mine. It is almost universal practice to keep the fan running at its normal speed and, in some cases, the speed has been increased just previous to firing. While there may be conditions, in a new mine that has not reached its full development and the ventilating fan is producing more air than is desirable, where it may be thought safer to reduce the velocity of the air current, at the working face, during the time of firing shots, it will generally happen that the large amount of smoke and gases set free at firing time, in a large mine, requires a larger volume of air to be circulated at that time than at any other during the shift.

QUESTION—*What are the advantages of shotfirers in coal mines?*

ANSWER—Where shotfirers are employed, the firing of all shots is done after the men have left the mine. The shotfirers are instructed to fire no shots that, in their judgment, are not safe. In order to obtain the best results, shotfirers should examine, charge and fire all shots themselves. It is not always possible to judge accurately of the safety of a shot that has been charged by another person. Fewer accidents have occurred where shotfirers are employed.

QUESTION—*Which would be easier ventilated, a slope mine or a drift mine?*

ANSWER—A slope mine will quite generally be found easier to ventilate, because of the air columns that are formed in the inclined airways. A drift mine, being level, possesses no such natural advantages that would assist its ventilation.

QUESTION—*Why is the ventilation of a mine necessary? Describe fully.*

ANSWER—Ventilation is neccessary in order to render the workings of a mine healthful and safe, through the circulation of an air current, which absorbs and carries away the gases generated in the mine. Also, in deep mines the air current is a means of lowering the temperature of the workings and making them more healthful

on that account. Without the circulation of fresh air in mine workings, the confined air would quickly become dead and be charged with gases issuing from the strata and otherwise produced by the burning of lamps and the breathing of men and animals.

QUESTION—*If you should find an open door at the foot of an entry giving off large quantities of gas, what would you do?*

ANSWER—To close this door would at once cause the air current to sweep the entry and drive the gas out, sending it circulating, perhaps through other portions of the mine. The door should be left standing open, therefore, until it is possible to withdraw all the men at work on the air currrent returning from that place. This being done and all entrances to the return current being guarded by reliable men, steps should be taken to clear the gas from the entry, by closing the door gradually. The method of proceeding must then be governed by the conditions existing in the mine.

QUESTION—*State the different methods of timbering bad roof and soft bottom, and good roof and soft bottom.*

ANSWER—Where the roof is bad and the bottom soft, not only will more timber be required in a working place, but a systematic method of timbering must be employed. Good cap-pieces must be used on the roof and all posts should be stood on footboards, in order to distribute the pressure better over the soft bottom. It may be neccessary to employ crossbars above the posts.

Where the roof is good and the bottom soft, it will generally be necessary to use footboards under the posts. This will usually be considered the worse condition of the two, as the hard roof will force the timbers into the floor when the weight comes on.

QUESTION—*Describe the means used for conducting air to the faces of rooms and entries and regulating the air current in mines.*

ANSWER—The most common means employed for conducting the air forward in rooms and entries is a brattice constructed of boards or canvas nailed to a row of posts set for that purpose.

The air current is regulated or distributed by means of a regulator, which is a partition built in an airway and having a small hole or opening, the size of which may be increased or decreased by a sliding shutter.

Bureau of Mines Broadens Co-operative Arrangements for Coal Study

CO-OPERATIVE agreements between the Bureau of Mines and outside agencies to apply during the new fiscal year are now being signed. While the actual addition to the bureau's appropriations from these sources probably will not exceed $250,000 in actual money the scope of the bureau's research is increased greatly by contributions of the services of technical men and by the payment of general expenses incurred in laboratory and other types of experimental work. The scope of the co-operative agreements of direct interest to the coal industry is as follows:

University of Alabama—To study the problems peculiar to the mineral industry in the Southern states, particularly those relating to coal, coke, byproducts, iron and non-metallic minerals.

University of Illinois and the Illinois Geological Survey—To study the possibility of the utilization of Illinois coals for the production of gas to replace Eastern coals. The study includes matters pertaining to mine ventilation and the washing of coal.

University of Washington—To study problems in washing Alaskan and Washington coals.

American Society of Heating and Ventilating Engineers—To conduct scientific investigations relating to efficient and economical heating and ventilating.

Carnegie Institute of Technology—To interest mine operators, engineers, miners and others affiliated with the coal-mining industry in the better training and education of students in coal mining engineering; to promote better engineering skill in coal mining in order to conserve human life, the coal resources and to prevent waste.

The Davison Chemical Co.—To conduct an investigation to determine whether or not it is possible to obtain a more complete recovery of light oil from coke-oven gas for the production of motor fuels.

Combustion Engineering Corporation—To make a study of the combustion of powdered fuels.

Pennsylvania Geological Survey—To sample and analyze coal in the State of Pennsylvania.

Sewalls Point Coal Exchange, Inc.—To conduct investigations concerning the preparation of coal with a view to increasing efficiency in use and assisting the economic development of the industry by improving the grading and classification of coal shipped to Tidewater pools.

The Steam Corporation—To determine the exact facts regarding the use of liquid fuel for domestic heating in a device sold under the name of "Nokol."

General Boilers Co.—To make a study of the smokeless combustion of bituminous coal.

National Safety Council—To conduct a safety service for the benefit of the coal- and metal-mining companies comprising the mining industry.

Southern Appalachian Coal Operators Association—To obtain and disseminate accurate information concerning the preparation of coal and to aid in its rational classification with a view to increasing efficiency and conserving resources.

Prescribes X-Ray of Educational Publicity To Set Public Right on Coal Trade

THAT the most pressing need of the coal trade is honest publicity was the opinion expressed by Homer J. Buckley, of Buckley, Dement & Co., in an address at the annual banquet of the Chicago Coal Merchants' Association, Dec. 12, at the Hotel La Salle. Seven hundred coal dealers were present.

"The coal industry of Chicago is suffering from ills of the wartime period that have left it in a very unfortunate position with the public," said Mr. Buckley. "Ask the average business man of intelligence what's wrong with the coal men and he will promptly tell you that they have a disease called 'dollar-itis'; that it is a malignant disease in their industry, and that there's a red sign on their door—so far as the public is concerned—reading 'keep out.'

"Of course, this is all wrong, you will say; 'We are being unjustly and unfairly maligned and our position is grossly misunderstood and misrepresented in the press.'

"If that is true—whose fault is it? No one's but your own. You have allowed a lot of negative publicity to get you in bad with the public, and, as invariably happens, you are discovering too late that poor advertising does not pay.

"You have it within your power to change the public mind. What you need is the searchlight of educational publicity directed to the public. Publicity and well-directed advertising is your remedy to set yourself right with the public. Resolve that all through 1922 this will be your policy. Don't procrastinate; only one thing is worse, and that is the chap who is afraid to begin—a quitter.

"What the coal merchant needs individually and collectively is the establishment of good will and confidence of the buying public. Good will may be defined as a feeling of satisfaction based upon satisfactory service, and service is never satisfactory until after it has been tried and tested.

"It is not enough that you deliver good coal and full measure—because nowadays that is imperative. The deciding factor in the satisfaction of a customer must always be the manner in which the account is handled after it is once obtained. The good will of the customer then usually depends upon the proper performance of what creative brains in business are so apt to regard as 'little details.'

"The greatest asset in your business—each and every one of you—is the good will and confidence of your customers. What are you doing to get it and maintain it?"

A RENEWED EFFORT IS TO BE MADE at this session of Congress to restrict further immigration into the United States.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

INDUSTRY and trade in general, according to a review of business conditions for December issued by the National City Bank of New York, continued during November to make and hold the gains made in October, although there is evidence that part of this gain was seasonal and is now falling off. The unusually warm weather in all parts of the country during the latter part of November affected retail trade to a considerable extent.

"The fundamental difficulty that has existed all through this year, that is, disparity between the price of farm products and all raw materials and the price of manufactured goods," the bulletin states, "continues to hamper the return of industrial activity.

"The settlement of the railroad strike was not obtained under conditions which give much promise of permanency. The railroads have all given notice of an application to the Railway Labor Board for further wage reductions, but the Board has stated that these requests will not be considered until after many questions affecting working conditions can be decided. It is not expected that these decisions will be ready before the middle of next summer and there is an insistent demand from producers, manufacturers, shippers and consumers all over the country for a more prompt adjustment of these matters.

"This situation illustrates the inadequacy of the machinery provided for the determination of rates, wages and working conditions on the nation's carriers. . . . It should be clear by this time that the railroad wage situation cannot be viewed or discussed solely from the standpoint of the roads and their workers. It profoundly affects the business and the prosperity of the country and cannot intelligently be viewed or considered without the effect on all lines of industry and the cost of living receiving due attention.

"It is nothing new to have the law of supply and demand pronounced a back number. Pronouncements of that kind have been appearing with great frequency for a long time, but it has always turned out that the law was working where the observers were not looking and in ways they did not understand. It may be suppressed for a time in one place, but it is like water on its way to the sea, it gets there eventually, no matter how much its course may be hindered."

Nearly All Industries Gain

Reports as to all of the American industries, except those relating to agriculture, are of an "encouraging character," it was stated in Washington, Dec. 9. With the exception of the agricultural industry it is stated that there is a steady recuperation.

Large Glass Plant Reopens

The Macbeth-Evans glass factory, Marion, Ind., one of the largest of its kind, which had been closed several months, has resumed operations, giving employment to five hundred persons working in three shifts. Street car service has been extended to the plant, a line being run from the soldiers' home.

Predicts Revival in Shoe Trade

The worst of the period of depression in the New England shoe industry is over, in the opinion of Edwin P. Holmes, retiring president of the New England Shoe Wholesalers' Association, expressed at the annual meeting of that organization in Boston, Dec. 14. Mr. Holmes declared that the industry was beginning to revive in spite of the fact that railroad, overhead and other charges remained as high as ever.

Railroads Lay Off Many Men

Five hundred employees of the New York Central R.R. repair shops at Elkhart, Ind., will be laid off indefinitely Dec. 24, and the Collinwood locomotive repair shops will be closed for an indefinite period because of depressed business conditions. Six hundred men will be affected in the Collinwood plant. The maintenance shops at Collinwood will continue to operate.

More than a thousand shop workers were thrown out of employment Dec. 15 when the Southern Railway closed its machine shops at Knoxville, Tenn., and suspended all work until Jan. 3 because of lack of traffic.

Thousands of shopmen employed by the Baltimore & Ohio R.R. were furloughed indefinitely Saturday, Dec. 17, when shops over the entire system shut down. Business depression and the necessities of effecting economies were given by officials of the road as prompting the action. The company has about fifteen shops, the principal ones being located in Baltimore, Cumberland, Pittsburgh, Keyser, W. Va.; Zanesville, Ohio; Cincinnati, Ohio, and Washington, D. C.

New England Textile Mills Hum

New England textile mills are busier this pre-Christmas season than at any time since the business slump which followed the war. While returns from other New England industries do not reflect holiday conditions equally bright, the Federal Employment Survey is authority for the statement, "the general feeling is optimistic for a marked improvement in all lines of industry after the New Year." The Federal Employment Survey for New England said its reports indicated that worsted spindles had returned to a 92.2 per cent basis; woolen spindles were 79.1 per cent operating, and cotton textiles on an 80 per cent basis.

Report Decrease in Army of Idle

A steady decrease in the number of unemployed in New York City has been in progress for several weeks and efficient workmen are experiencing less trouble in finding jobs, according to a statement issued last week by the Industrial Aid Bureau. Signs point unmistakably toward a permanent revival after the holiday season, it is said, as employers agree that they will require increased forces after the first of the year. There has been little or no real improvement, according to the bureau, in the demand for stenographers and unskilled labor, of which there is an oversupply for the few positions open.

Changes in Tax Law Seriously Affect Owners of Coal Land

Section Permitting Net Loss of One Year to Be Offset Against Net Income in Two Succeeding Years Contains Restriction on Mines

BY ROBERT MURRAY HAIG, PH.D.*

AMONG the changes made by the new tax bill signed by President Harding on Nov. 23, five stand out as of great importance from the point of view of the business man and the investor. These are:

(1) The abolition of the excess profits tax as of the beginning of next year, coupled with an increase in the income tax on corporations at that time from 10 per cent to 12½ per cent.

(2) The reduction in the surtax rates on individual incomes which goes into effect at the same time.

(3) The establishment, with the beginning of next year, of a new class of income to be known as capital gain, which will be subject to a maximum rate of 12½ per cent.

(4) The broadening of the definition of the "closed transaction," effective for the current year, which makes possible many exchanges of property for property without subjecting the gain to taxation.

(5) The recognition, beginning this year, of a net loss from one year's operation as an offset against any profits which may accrue in the two following years.

The first two changes, the repeal of the profits tax and the changes in rates, have been the subject of much comment, but the other changes, being somewhat more technical in character, have been less discussed and their significance less fully appreciated.

PERSONAL SERVICE CORPORATION DISAPPEARS

Excess Profits Tax Repeal.—In spite of great pressure, Congress declined to repeal the profits tax for 1921 but did agree to abolish it thereafter. With it disappears the "personal service corporation," a special class established to care for certain corporations which it was desired to exempt from profits taxation. When the profits tax goes, the income tax rate on all net income of corporations rises from 10 to 12½ per cent. The change in the rate will cause corporations which make only moderate profits to pay slightly heavier taxes, but the total tax burden on corporate income will be much lighter, the official estimates of revenue under the new bill calling for $1,030,000,000 from this source (ignoring back taxes) this fiscal year and only $695,000,000 for the next fiscal year, when the changes will be in force.

Reduction of Surtax Rates.—The surtax rates on individual incomes are scheduled for reduction beginning with the first of next year. A comparison of the new scale with the old is difficult to make. It should be made clear, however, that the change affects small taxpayers as well as large ones. The maximum rates remain very high—50 per cent as compared with 65 under the old law. The 50 per cent rate applies to all income in excess of $200,000.

SURTAXES BEGIN ON $6,000-$10,000 INCOMES

The old rate on increment of income above $200,000 income was 60 per cent. Surtaxes in the future will not begin until the income is between $6,000 and $10,000. Under the old law the surtaxes begin at $5,000 and mount by more rapid steps. There also are slight changes in the personal exemptions, effective at once. According to the revenue estimates these changes will not provide much relief for individual taxpayers, for the government expects to get $780,000,000 next year with the changes in effect, as compared with $850,000,000 this year.

New Class of "Capital Gains."—The most revolutionary section in the new act is Section 206, which sets up a new division of income. After the first of next year money made by individuals by selling or exchanging property "held for profit or investment" is subject to a maximum rate of 12½ per cent, instead of the regular rates, which range as high as 58 per cent (normal plus surtaxes). This is hedged about by several restrictions. The individual may not take advantage of the permission to use the 12½ per cent rate unless he is willing to pay at least 12½ per cent on his other income as well. The property "held for profit or investment" must have been so held for more than two years and may not include property "held for the personal use or consumption of the taxpayer or his family," or property which properly is subject to inventory. It is not necessary, however, that the property be connected with his trade or business.

The reason for the adoption of some such section as this is plain, whatever one may think of the wisdom of choosing this particular method of meeting the situation. As everyone knows, many sales of property have been postponed or entirely blocked by the unwillingness of prospective sellers to take their profits when they would immediately become subject to heavy surtaxes. This, of course, handicapped business. The solution adopted was practically to wipe out the offensive surtaxes on profits from this class of transactions.

One anomalous result of the selection of this solution, however, is that under this new arrangement a dollar of profit made from property which has grown in value is taxed at the maximum only 12½c., whereas a dollar made otherwise may be taxed as much as 50c. For example, in the case of a bond bought at a discount and sold at a profit, every dollar of interest on the bond may pay a tax nearly five times as great as every dollar of appreciation in the value of the bond, a fact which is likely to affect profoundly future methods of corporate financing.

LIBERAL PROVISIONS ON "CLOSED TRANSACTIONS"

Much more could be said regarding the effects of this new section from the points of view of equity and of administration, but what is of particular interest here is to point out the very substantial relief granted by it to investors in property which appreciates in value.

The "Closed Transaction."—The advantage to the investor in property which is gaining in value, conferred by the section just described, is accentuated by the liberal provisions governing the "closed transaction" (section 202). This has long been a troublesome section of the field of income tax procedure. When one exchanges property for cash, no question arises. The transaction is "closed," and one accounts for his gain to the tax collector. But when one barters instead of sells, receiving other property instead of cash for his property, very serious questions arise. There are sometimes differences of opinion as to the value of the property received which lead to disputes and litigation. The old law went so far as to say that in the case of such trades the property received was to be treated as cash "to the amount of its fair market value, if any" (with certain exceptions in the case of a corporate reorganization—1918 law, section 202). The new law goes much further. It now states positively that no gain or loss on trades shall be recognized unless the property received on the trade "has a readily realizable market value." The phrase "readily realizable" adds a new and liberalizing element.

Even more important, however, are the exceptions made to the general rule. Even though the property received has such a "readily realizable market value," one need not account for the gain in certain cases. This is one: "When any such property held for investment, or for productive use in trade or business (not including stock-in-trade or other property held primarily for sale), is exchanged for property of a like kind or use."

How the Treasury will interpret this section is, of course, as yet unknown, but it would be a very narrow interpretation which would exclude exchanges of bonds or real estate for real estate. In other words, so long as one "barters" or "trades" his property for other similar property instead of selling it for cash, he need not account for his gains to the Treasury for tax purposes. Even if he does sell for cash, as has been noted above, he is subject to a tax of only 12½ per cent.

The provisions governing corporate reorganizations and

*School of Business, Columbia University.

sales of property to corporations also are greatly liberalized; so it is unnecessary to report many gains for taxation.

Net Losses.—With one minor exception included in the 1918 law, it has been the practice since the beginning of income taxation in this country to treat each year as a unit and to refuse to permit the fact that one has lost money this year to affect the amount of profits he must report the following year. Each accounting period has been carefully "insulated" from other accounting periods. This practice has worked much hardship, and the new law breaks away from the old precedents by inserting a provision, effective for 1921 (section 204, with a restriction on mines), which permits a net loss suffered in one year to be offset against any net income in the two next succeeding years. In other words, losses may be used to blot off subsequent gains but losses are "outlawed" for this purpose after the expiration of two years.

The new law contains many other new provisions which it would be interesting to discuss, did not the limits of this article prevent it. Such changes include the new rule regarding gifts, which makes the recipient, if he sells the gift, account for the gain in the value of the gift before he received it; the section aimed to prevent "wash sales" to establish losses; the provision covering cases where property is involuntarily converted into cash and the modifications in the various special taxes.

It has been possible to stress here only the most important departures in the new status. Careful examination by the business man and the investor will reveal the fact that it contains provisions, aside from the repeal of the profits tax and the changes in the rates, which will yield him very substantial relief from the burdens of war taxation under which he has been struggling for the past five years.

Open-Price Associations Declared in Violation of Anti-Trust Laws by Supreme Court

EXCHANGE of price information—the open-price association, in other words—is declared a restraint upon trade in violation of the Sherman Anti-Trust Law by the Supreme Court in a decision in the Hardwood Lumber case, handed down on Monday, Dec. 19, 1921. The government in carrying its case to the Supreme Court had charged that the American Hardwood Manufacturers' Association, consisting of 603 persons and corporations engaged in the production and sale of hardwood lumber, combined and conspired to eliminate competition among themselves and to enhance their selling prices in restraint of trade, and that they did this by comparing and exchanging under an "open-competition plan" the reports and bulletins concerning prices, stocks and production.

In rendering its decision the court divided, six to three, Justices McKenna, Holmes and Brandeis dissenting. It sustained the United States District Court of Western Tennessee, which in April, 1920, granted an injunction perpetually restraining the association from entering into further agreements under the plan, forbidding the further distribution of statistical information under the plan and directing the abandonment of all "efforts whatsoever having the purpose or tendency to enhance or maintain prices."

Called Combination to Control Price and Output

The opinion of the court was delivered by Justice Clarke, who described the organization of the association and asserted that it was a clear combination to restrict production and to increase prices.

The decision of the court will be far-reaching in that it will prevent operation of similar exchanges of information in other industries, including that instituted by the National Coal Association, which was suspended upon institution of the government's suit against the lumber interests. The Federal Trade Commission and the Department of Justice have also been investigating similar associations, although the Department of Commerce believed that such organizations could be effectively utilized in trade promotion.

Justice Clarke declared that the lumber association plan embraced the old trust "evil in a new dress," and that while there was no specific agreement as to production or price the members were in a united and concerted action to acquire control of the industry. Answering the lumber argument that the government issued information reports, the court pointed out that the government reports were available to both sellers and buyers while the association's reports were sent only to the sellers.

Dissenting, Justice Holmes, while admitting that it was an organization of sellers, said that its information was made public and that the plan did not bind the members, they being free to act as they chose. He also said there was nothing illegal in discussing prices, and that the plan would centralize purchases.

Justices Brandeis and McKenna also dissented, saying the percentage of control was not large—300 concerns out of 9,000 lumber dealers—and defended the practice on the ground of its aid to isolated mills. The service was useful in that the government maintained no reports as to market conditions. The meetings of the association and its reports were also available to the public. They admitted that the plan was a combination, but not in restraint of trade. The only evidence was that the combination sought to make money out of a boom market, there being no uniformity of action as to production or price, and they insisted that the anti-trust act did not "limit the desire to make profit."

Justice Brandeis declared it to be "an extraordinary fact" that the Supreme Court should alter its decision in the United States Steel Corporation case, where 50 per cent of the industry is controlled, and in the United Shoe Machinery case, where nearly all the shoe industry of the country was controlled, holding them not in violation of the Sherman law, and should hold in the present case that 603 out of many thousand hardwood operators "cannot exchange information without running counter to the provisions of the Sherman law."

With respect to the government policy toward the open-price associations, in some instances it was believed likely that additional prosecutions would be brought, while in others where the activities of associations do not come within the terms of the decision a definite outline of the application of the Sherman act could be made.

Constitutionality of Anthracite Tax Law Attacked in Dauphin County Court

EXPECTATIONS are that the Dauphin County Court of Pennsylvania will soon render a decision in the anthracite tax case, which was heard at Harrisburg, Nov. 25. Most of the questions raised against the constitutionality of the 1915 anthracite tax law were used in the argument by Henry S. Drinker, Jr., of Philadelphia, who represented the interests opposing the tax. George E. Alter, Attorney General, and George R. Hull, a deputy, spoke in favor of the act.

Emphasis this time was placed by the commonwealth on the importance of the byproducts of bituminous coal. Mr. Alter endeavored to show that hard and soft coal were two different kinds of coal and that either one could be taxed singly.

The case will be carried direct from the Dauphin County Court to the appellate court, so that an early decision from the state's highest tribunal can be obtained. Anthracite has been assessed under the act of 1921 since July 1 and the payment of the tax to the state commences on Jan. 1.

Open Shop Spreading in West Virginia

ALTHOUGH in many cases the United Mine Workers have been able to hold their members in line, open-shop sentiment in northern West Virginia continues to grow and many mines in the state are now being operated on that basis. There are no less than fourteen of these in the Morgantown section, mines on the Monongahela Ry. and on the Morgantown & Wheeling Ry. being included in that list. Mine workers have agreed to work and are working on a lower wage scale than the union would permit, and this has enabled operators to give them several working days a week. In the Upper Potomac field of West Virginia and in the Georges Creek field of Maryland there are approximately 800 miners who have gone to work on the basis of the 1917 wage scale. Where locals have accepted a lower rate of wages than is provided for in the union contract, the members have been automatically dropped from the organization.

Effort is being made by Harry B. Dynes, commissioner of conciliation, Department of Labor, who has been in the Fairmont region for several days, to reconcile the differences between the Long Coal Mining Co. and the miners at Reynoldsville. There are many points of disagreement but it is understood that the United Mine Workers' contract is not involved, as a new agreement made between the company and its employees displaced the contract with the United Mine Workers of America. When this occurred the men were dropped from the union.

Union miners are attempting by picketing to prevent the operation of the Haymond mine of the Ryan Coal Co., of Clarksburg, and on Dec. 6 assaulted a workman who, they thought, was going to work in the mine but who was in reality a county employee. Police were on duty at the mine both Monday and Tuesday to preserve order. The company has refused to collect the check-off and miners are on strike to enforce this provision.

A True Yarn

(Editorial from *Engineering and Mining Journal*, Dec. 17)

ONE autumn day we hitched our horse to the post outside the bare board, one-story "hotel" at Silver Peak, in Nevada. Silver Peak was an ancient and deserted mining town in those days. The mines had long been closed. Down the one long straggly sand-swept street the irregular board shacks, with their rusty stovepipes, projecting, straight or tilted, from the roofs, lined themselves without order or hopefulness. Nearly all of them were empty, windows broken, sand drifted over the doorsills. The few remaining inhabitants—who knows what held them there or what they lived on?—had more or less concentrated into the little shacks around the "hotel," where at least there was a bottle of whisky behind the bar, a stove for cold nights, and card tables.

When we walked in, there were five or six residents, old "desert rats," each with his chair tilted back against the wall, and his head sunk on his breast in an attitude of hopeless despondency. The bartender and proprietor took hardly a casual interest in our arrival, in a place where arrivals were very rare; the wall-pillars none save a cynical and crestfallen glance. The atmosphere was of some great evil, some community disaster, which might have soured so completely this silent crew.

We inquired the cause—asked the reason for the funeral At last we found out. One of the old-timers told us without humor, but with pathos and a justly wounded spirit. He informed us that there had been, for some months past, almost exactly three hundred dollars in money in that town. They had their supply of grub; and had not had occasion to buy any supplies for a long time. But they had their social life—they talked, they drank, they played poker. Especially poker. Sometimes one man had the three hundred dollars, sometimes another; but always, Desert Bill observed, there was a chance of getting it back, and the game went on. The proprietor got some of it for drinks, but he lost it again to one of the boys. All went happily for weeks in this little sequestered remnant of life, as Desert Bill gave me to understand, till one day a feller hove in sight and said he was out to work some mining claims. And he played poker with the rest.

It wasn't, said Bill, that he didn't play a straight game, but the fact is that he had left very early in the morning after he had won the three hundred dollars. God knows he was welcome to the three hundred, which they didn't need, and he had won fair; but they had their occupation removed, and couldn't go on playing poker. Their whole joyous life was past; wherefore, if they caught that mean skunk they'd surely take a shot at him. And with hopeless sighs the boys hunched into their chairs and relapsed against the wall.

When we consider the unpopularity of America among the European nations at this time, we think of Desert Bill at Silver Peak in 1899, and we understand. It isn't that she did not get the world's gold in a fair game, but she has taken the pot and gone home with it; and they sit around with no gold to get in on the game with; and if they should get a chance at the United States they "shore would get even."

Anthracite Conciliation Board Has Settled 1,078 Grievances; 246 in 14 Months

MORE than a thousand grievances had been filed with the Anthracite Board of Conciliation from its inception up to Dec. 1, according to figures just compiled. The actual number, 1,078, represents a small fraction of the grievances adjusted through the instrumentality of the board because only those cases are listed in which informal efforts have failed to bring about an adjustment.

Under the present agreement, covering a period of fourteen months, the board has acted on a total of 246 cases, of which number 229 were filed by the employees and 17 by coal companies.

Season's Coal Receipts at Duluth-Superior 1,134,183 Tons More Than Last Year

RECEIPTS of coal, both anthracite and bituminous, at Duluth-Superior during the 1921 season of navigation totaled 10,164,849 net tons, an increase of 1,134,183 tons over last year. Receipts by months were as follows, in net tons:

Month	Anthracite	Bituminous	Total
April	83,058	120,212	230,027
May	173,190	1,548,880	1,722,070
June	192,830	2,125,453	2,318,283
July	339,383	1,650,629	1,990,012
August	418,238	1,068,555	1,486,793
September	207,901	647,095	854,996
October	257,240	808,260	1,065,500
November	141,496	325,457	466,953
December	31,306	25,666	56,972
Total for season	1,844,642	8,320,207	10,164,849

Freight-Car Loadings Increase 73,627

LOADING of revenue freight during the week ended Dec. 3 totaled 747,454 cars, according to reports from the American Railway Association. This was an increase of 73,627 cars over the total for the previous week, which included a holiday, Thanksgiving Day, but was 135,150 cars less than that for the corresponding week last year and 41,832 less than that for the corresponding week in 1919. Coal loadings totaled 137,293 cars, compared with 137,432 cars during the short preceding week or a reduction of 139 cars. An increase of 38 cars was reported for coke, the total being 6,345.

A. G. GUTHEIM, WHO SPECIALIZES in coal transportation for the car service division of the American Railroad Association, is being mentioned for membership on the Interstate Commerce Commission. The terms of two members of the commission expire in the near future. While it is possible that the President will renominate the incumbents, some are of the opinion that at least one change will be made. It is in connection with this possible vacancy that Mr. Gutheim's name is being mentioned.

Roads Make Perfunctory Protest Against Reduction of Rates; Public Sentiment Likely to Force Cuts

By Paul Wooton
Washington Correspondent

THE railroads failed absolutely to score in that part of their presentation of arguments against rate reduction which had been presented at the time of this writing. It was the general opinion that few new arguments had been presented and that no strikingly telling point had been made. It was apparent that the Interstate Commerce Commission has not been impressed by any of the arguments advanced. The case of the railroads is being presented in such a perfunctory way as to lead to the conclusion that they are sparring for time. There is evidence of legal strategy in an effort to keep the strong points of their argument in the background rather than present them now and allow them to be targets for the shippers. None doubts that the representatives of the railroads have in reserve a much better type of ammunition than has been fired thus far.

At the close of the session of Saturday, Dec. 17, the railroads had completed their preliminary statistical arguments against rate reductions, whereupon the Interstate Commerce Commission adjourned its investigation into the reasonableness of transportation rates at present levels until Jan. 9. Alfred Thom, of the Association of Railway Executives, gave notice that R. M. Aishton, president of the American Railway Association, would then be called to give testimony as to the efficiency and economy of current carrier operation.

Shippers' representatives and state and municipal experts will have an opportunity to cross-examine witnesses then. During recess the commission will study the statistics so far submitted.

Traffic specialists who are attending the Interstate Commerce Commission hearing recognize that the public sentiment in favor of rate reduction is so pronounced as to make it a foregone conclusion. Were the commission to announce a refusal to reduce rates, it is believed that there would be such a widespread resentment made manifest as to insure the railroading through of special legislation making a substantial rate reduction mandatory. The fear is expressed in some quarters that the commission will be influenced to such an extent by the overwhelming volume of public demand for rate reduction as to be inclined to go further than the best interests of all concerned require.

Demand for Reduction Keen on Basic Commodities

The commission is not likely to authorize a blanket reduction. A material reduction could be made in the rate on watermelons without affecting greatly the carriers' earnings. If the same reduction were to be applied to coal, which constitutes such a large proportion of railroad tonnage, it would have an important effect on earnings. For that reason some are of the opinion that coal rates will not be reduced to the same extent as will the rates on some other commodities. At the same time it is recognized that the demand is keenest for reductions on basic commodities.

Opposition to a "sweeping" reduction in railroad rates at the present time was expressed by railroad representatives at the opening of the investigation. It was argued that the railroads were not at present in financial position to afford a cut in revenue, but that if basic costs, including wages and fuel, were lowered, reductions could be made later. They recommended, on the other hand, a process of rate readjustment.

Howard Elliott, of the Northern Pacific R.R., said that while some rates may be too high, the present general level, with numerous adjustments since made, is not too high, considering what the railroads must pay for wages, fuel and supplies. He said a sweeping cut in rates would not increase transportation or revive business. He insisted that there should be lower wages on the railroads, in the mines and in the building trades, which would mean greater employment and a lower unit price on many articles.

"There was little complaint about the Transportation Act a year ago, or about the rates," said Mr. Elliott. "In fact, then the complaint was for more cars, more tracks, more engines, and a demand that the railroads move coal, etc., and the rate was a secondary matter."

George M. Schriver, vice-president of the Baltimore & Ohio, contended that the railroads were not now in financial condition to permit of a general rate reduction unless pre-war levels of costs of materials, etc., were reached. The basic costs of operation were declining and would continue, which would later enable reductions.

Carriers in the Southern and Western districts, the latter including the Mountain-Pacific group, presented their arguments Saturday. C. R. Capps, vice-president of the Seaboard Air Line, speaking for the carriers east of the Mississippi and south of the Ohio, argued that earnings from present rates were running at the rate of 2.2 per cent on invested capital.

Edward Chambers, vice-president of the Atchison, Topeka & Santa Fé, argued for Western carriers that the present rate schedule could not be considered too high, as the figures developed by L. E. Wettling, manager of their traffic bureau, showed current earnings to be 3.04 per cent on valuation of their properties.

Text of I. C. C. Ruling Refusing Decreased Rates on Lake Ore After Jan. 1

THE announcement of the Interstate Commerce Commission refusing continuance after Jan. 1 of decreased rates on lake ore, in which coal rates are involved, follows:

The commission today declined to issue special permissions under the sixth section of the Interstate Commerce Act to allow carriers in Eastern territory to continue from Jan. 1 to March 31, 1922, inclusive, reduced rates on iron ore. The commission's action is based upon protests of shippers located at Buffalo, Cleveland, Erie, Chicago and other lake ports alleging that the proposed rates result in undue discrimination against them and preference for competing furnace interests at Pittsburgh and other interior points.

Coal and iron ore are two of the important elements entering into steel manufacture. Most of the iron ore used in the East comes from Minnesota by lake. Lake-front furnaces, therefore, pay no rail freight charges on ore but transport their coal by rail from Pittsburgh and other interior points. Interior furnaces, on the other hand, while paying rail freight from Lake Erie ports on ore, are in most cases located in close proximity to the coal fields and pay only short-haul rates on coal.

In 1917 iron ore was transported from Lake Erie ports to Pittsburgh for 82c. per ton of 2,000 lb., whereas coal was charged $1.40 per ton from Pittsburgh to Buffalo, a difference of 58c. per ton. Iron-ore rates in the East were not increased during federal control, but coal rates were increased approximately 25 per cent. Rates on both commodities were increased in August, 1920, resulting in rates on ore and coal of $1.14 and $2.51, respectively.

Under the adjustment now proposed by Eastern railroads the ore rate would be 28c., or the same as in 1917, whereas the coal rate would continue $2.51, including the increases of 1918 and 1920, and being higher by $1.69 per ton, or 206 per cent, than the ore rate. The rates on iron ore which will apply after Jan. 1, 1922, will include materially less increase over the pre-war basis than rates on commodities generally—even less than the reduced rates on farm products soon to be made effective.

The action of the commission is in no sense to be interpreted as a disinclination to approve justifiably lower rate levels, but is based upon the continuance of premature reductions confined to certain rates, the outcome of which is to unduly prejudice iron and steel manufacturers located on the lake front to the advantage of competing interior furnaces.

Sales of British Coal in American Atlantic Ports Arouse Public Interest in Export Coal Rates

By Paul Wooton
Washington Correspondent

WHILE no one familiar with the coal business anticipates any extensive importation of coal, the announcement by Commerce Secretary Hoover that British coal is being sold in our Atlantic ports at a price which could not be met by dealers in American coal has aroused the entire country to a situation which has been developing for months but in which the public heretofore has taken little interest. The war-born realization that the United States had grossly neglected its foreign trade resulted in a general expectation that the United States under changed world conditions would become a great exporting nation. It is a matter of common knowledge that an export coal trade has an important bearing on the exports of other commodities and is almost an essential to a merchant marine. As American coal was crowded out of one foreign market after another, the process was so gradual and so unaccompanied by publicity in popular mediums that comparatively few knew that our foreign trade in coal had collapsed until announcement was made that England was walking away with business that had been ours undisputedly for forty years.

With the sudden manifestation of country-wide interest in the coal situation, government agencies other than the Department of Commerce evinced immediate interest in the situation, with the result that a meeting was called by Chairman McChord of the Interstate Commerce Commission on Dec. 14. It was attended by Secretary Hoover, representatives of several government agencies which deal with coal, representatives of the railroads, a committee of the National Coal Association, and by representatives of other interests concerned with coal.

The original intention was to have a quiet discussion of the situation in a small group, but the affair developed into quite an assembly, as more than fifty were in attendance. A committee was appointed to make a specialized inquiry into the situation. The personnel of the committee is as follows: J. B. Smull, vice-president of the Emergency Fleet Corporation; F. R. Wadleigh, fuel division, Department of Commerce; F. W. Whitaker, vice-president, Chesapeake & Ohio R.R.; T. F. Farrell, vice-president of the Pocahontas Coal Co., and W. V. Hardie, director of traffic for the Interstate Commerce Commission.

This fact as well as certain expressions at the meeting tend to the belief that the railroads themselves may propose immediate reductions in the export rates. Even if there should be no such initiative on the part of the railroads, it is believed that the Interstate Commerce Commission will act in the near future. It is regarded as certain that the matter of coal export rates will not be allowed to go over for decision in considering the question of a general reduction. The railroads face a difficult situation in the pressure for reductions in all export rates once a concession is made on one commodity.

While apparently American producers are facing a disadvantage of nearly $2 a ton as compared with English prices, it is believed that a cut of $1 in their tidewater cost would enable them to compete, particularly in instances when low charters could be obtained.

Kansas Insurgent Women War on Union Men Militia Called Out and Women Go Home

SCREAMING in foreign tongues, two thousand wives and daughters of the insurgent mine workers on Dec. 12 rushed on the members of the United Mine Workers of America who, remaining loyal to the organization, were at work at No. 17 mine of the Jackson Walker Coal & Mining Co., near Franklin, Kan. The Sheriff's deputies were powerless to stop them. The women entered the engine house and drove out the men. An interurban car which was bringing more men to work was compelled to go on without unloading its mine workers. Other men, arriving in automobiles, were taken prisoners.

The success at this mine emboldened the women to go further, their husbands, fathers and sons trailing along behind them ready to mix in if anyone was "unmanly" enough to defend himself against these viragos. In fact they called out threats against any who might thus presume. Dinner buckets were smashed and the men were showered with the victuals and coffee. Red pepper furnished an effective addition to these impromptu weapons.

To some mines they went in a body but others they tried to clean up by smaller groups, and occasionally, as at mines Nos. 9 and 19 of the Sheridan Coal Co., the men refused to leave their work, and the attackers retired crestfallen. The Jackson Walker Mines Nos. 45, 48, 51 and 21, being attacked in force, surrendered to the women's onslaughts.

On Dec. 14 the Kansas National Guard was ordered out, and four companies of cavalry and one machine gun company were sent into the field. On this day the women beat up one man and traveled to new mines in a string of automobiles a mile long. At some of the mines they entered the mine workers' homes and compelled the women and girls to accompany them on their march.

When the guard arrived the women returned to their homes, choosing the night of Dec. 15 as an occasion for stealing away unobserved. Six hundred warrants have been prepared for service and the authorities will endeavor to have the wives of unnaturalized mine workers deported.

Work has been resumed at most of the mines. On Dec. 16 the men at Sheridan mines Nos. 15 and 9 and Clemens mines Nos. 21 and 49 returned to work. If the troops are kept in the field for a while it is probable that the insurgent strike will come to an end.

One Anthracite Mine in Every Eight Idle

TWENTY-THREE thousand anthracite mine workers are idle as a result of the lack of orders for coal. To this another twenty-five thousand are likely to be added if business does not improve. However, the approach of winter means that the stagnation will not long continue.

W. W. Inglis, president of the Glen Alden Coal Co., was reported to have said on Dec. 15 that unless the demand strengthened unexpectedly, half the mines of his company, employing 17,000 men, would have to close down, and on the following day an announcement was made that the mines would work half time. C. C. Dorrance, vice-president of the Hudson Coal Co., foreshadowed similar irregular work for the 1,600 men in his mines. The Scranton Coal Co., with 5,000 men, also faces a shutdown.

The Lehigh Valley Coal Co. has 8,000 miners on a strike in violation of the contract. The strike arises out of two petty grievances affecting in the aggregate only seventeen men. About 15,000 employees of the Pennsylvania Coal Co., the Hillside Coal & Iron Co., the Jermyn Coal Co. and the Temple Coal Co. are idle by reason either of strikes or lack of orders.

The shutdown of the Pennsylvania and Hillside collieries was due to the latter. It affects 10,000 men. The mines closed are No. 14, Ewen, No. 6, Butler, Barnum, Old Forge, Central and Consolidated. The Jermyn Coal Co. had been idle since February when, on Nov. 15, after ten months' idleness, it reopened at the old scale. It worked a few days and then shut down, the management asking for a 5-per cent wage reduction as against 17 per cent which was the request on the first closing down.

Circuit Court of Appeals Returns Injunction Order to Judge Anderson to Be Recast

Finds Four Errors in Ruling of District Court Jurist—Enjoining Performance of Existing Check-off Contracts Declared to Have Been Beyond His Jurisdiction—Strike Danger Removed

IN a highly technical opinion handed down on Thursday, Dec. 15, the U. S. Circuit Court of Appeals returned the injunction threatening to disrupt the coal-mining industry of the country to Federal Judge A. B. Anderson at Indianapolis for a series of corrections. Judge Anderson is criticized for going beyond the limitations of the case and his own jurisdiction in the original decree.

Judges Baker, Evans and Alschuler, constituting the Court of Appeals, in their ruling find that Judge Anderson erred in confirming his grant of relief to the Borderland Coal Corporation, the litigant in the case against the United Mine Workers organization.

The decision removes the danger of a nationwide coal miners' strike and leaves a satisfaction in the minds of the union officials that they have won a victory according to interpretation of the opinion by attorneys for both sides. It is seen as a permission to the union to organize the West Virginia fields under peacable methods. Also it leaves the check-off in its previous status.

"From the record as it now stands," the opinion reads, "we are convinced that the District Court committed errors in exercising its judicial discretion in the following particulars:

"(1) In not confining the grant of relief to appellee.

"(2) In not limiting the prohibiting of the unionization or attempted unionization of the appellee's mines to the threatened direct and immediate interfering acts shown by the bill and affidavits.

"(3) In not limiting the prohibition of the sending of money into West Virginia to the use thereof in aiding or promoting the interfering acts.

"(4) In enjoining the performance of the existent checkoff contracts in the Central Competitive Field.

"The decree should be recast, and for that purpose the cause is remanded with the direction to the District Court to enter a preliminary injunctional decree which shall be in consonance with this opinion."

The court does not find that the case is an indictment to punish conspirators for their crimes. Neither does it find that the bill seeks to enjoin or dissolve an unlawful conspiracy or combination in restraint of trade, as was contended by counsel for the operators in the arguments on filing of the appeal.

On the check-off the opinion reads:

"The Borderland Coal Corporation sought and obtained a decree enjoining the performance of the existing contracts between the operators and their union employees in the Central Competitive Field with respect to what is called the checkoff provision. So far as the contracts themselves and this record discloses, the checkoff is the voluntary assignment by the employee of so much of his wages as may be necessary to meet his union dues and his direction to his employer to pay the amount to the treasurer of his union. In that aspect the contract is legal; and quite evidently there are many lawful purposes for which dues may be paid.

"If nothing else should prevent the Borderland Coal Corporation being given that part of the decree now under consideration [the check-off], the lack of injury to the Borderland Coal Corporation by the existence of the check-off contracts would suffice. The injury to the Borderland Coal Corporation property rights in interstate commerce of which the Borderland Coal Corporation was apprehensive was that it would be coerced into paying the high cost of production prevalent in the Central Competitive Field and thus be unable to meet or at least to meet so profitably the existent competition in interstate commerce. As long as the Borderland Coal Corporation is assured, as it now is, that it will have full protection in operating its closed non-union mine and in marketing its coal in interstate commerce without interference, the Borderland Coal Corporation should rather pray that all the elements causing the high cost of production in the Central Competitive Field should be maintained."

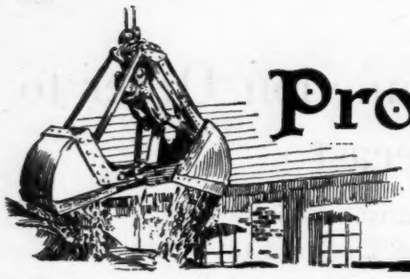
G. N. Snider Leaves New York Central to Become Manager of Coal Company

BEGINNING Jan. 1, 1922, G. N. Snider, coal traffic manager of the New York Central lines, will sever his connection with that company and become associated with the coal firm of Dickson & Eddy, New York City, as general manager. Announcement of this change was made Dec. 17.

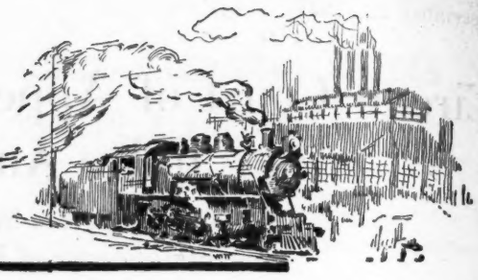
Born in Spring Valley, N. Y., Mr. Snider was graduated from Nyack (N. Y.) high school in 1899 and New York University School of Law in 1906, and was admitted to the Bar of New York State in the latter year. His connection with railroad service began in December, 1899, when he became a messenger in the freight department of the West Shore R.R. He was transferred to the coal traffic department of the New York Central (Lines East) in February, 1902, as statistical clerk, occupying in turn all the higher clerical and secretarial positions. In February, 1909, he became chief clerk; was made assistant coal traffic manager March 15, 1911, and coal traffic manager Sept. 1, 1917.

G. N. SNIDER
Retiring Coal Traffic Manager, N. Y. Central R.R.

Mr. Snider assisted Rembrandt Peale in the organization and operation of the Tidewater Coal Exchange in June, 1917, and became chairman of the Executive Committee in March, 1919. He was transportation adviser to Fuel Administrator Garfield from October, 1917, to June, 1919, and became chairman of the Railroad Advisory Committee, Tidewater Coal Exchange, Inc., in May, 1920.



Production and the Market



Weekly Review

COAL men have adopted a policy of rigid curtailment of production in all fields, shrinking output to match a slim demand. The reduction in the volume of distress tonnage is correspondingly great and prices generally have been maintained. COAL AGE Index of spot prices remains at 83 for Dec. 19.

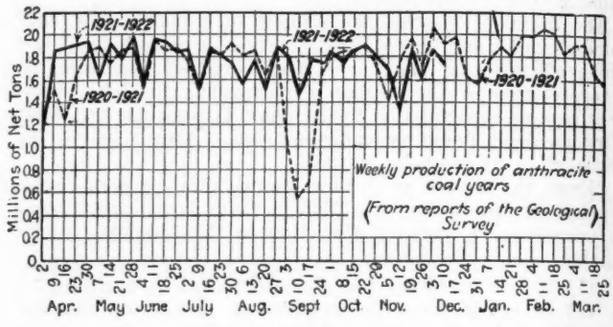
The sluggish buying of the past six weeks has eaten into consumers' reserves even with existing low requirements. Fuel purchasers have been reducing their heavy stocks in order to embody in their annual inventory sheets figures showing as strong a position as possible in cash resources and a minimum of investment in material and supplies.

Many coal houses have withdrawn their road forces until after New Year's, feeling that active solicitation of business only furthered the hammering down of prices necessary to close sales. While some look for but slight improvement after Jan. 1, others in the trade point to several encouraging features, the removal of the transportation tax and inventory period, colder weather, the gradually increasing industrial activity and prospective buying for storage in anticipation of a strike in the spring. Optimism and confidence prevail as some see a return of the interest of the consumer in future tonnage.

WORKERS HARD HIT IN UNION FIELDS

Union officials profess to see a victory in the decision of the Chicago court on Judge Anderson's check-off injunction, which is described elsewhere in this issue. Deplorable conditions exist among the men in the unionized fields, where the higher wage scales have been adhered to despite loss in tonnage. The ever-increasing number of miners who are ready to accept lower wages as a result of short time and slim earnings this year doubtless will be a factor in the wage settlement next spring.

Steam sizes of bituminous coal are still rather scarce in the West, due to low domestic production, but demand is not strong enough to cause any appreciable price boost. The retailer is in an unenviable position. Heavily stocked with bituminous coal, bought at prices higher than current quotations, he has been faced with an unseasonably warm period and reduced buying power, which have greatly curtailed distribution. The usual public complaint against high-priced retail coal has been increased because of present low mine quotations, and a virtual boycott against the retailer has resulted.

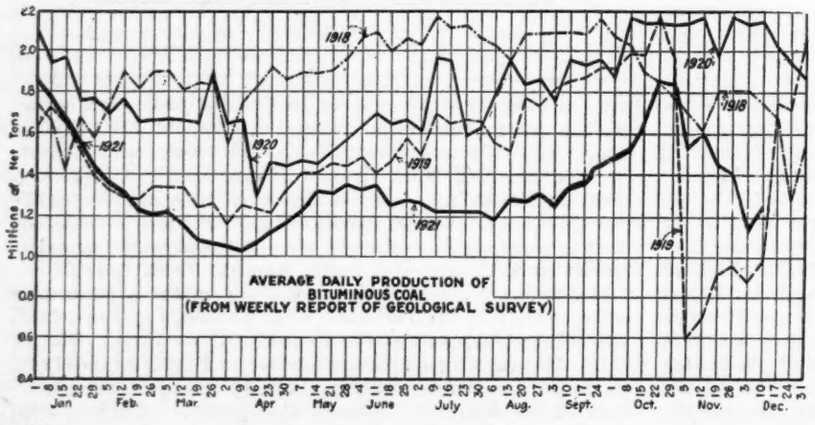

1921-1922
1920-1921
1921-1922
1920-1921
Millions of Net Tons
Weekly production of anthracite coal years
(From reports of the Geological Survey)
Apr. May June July Aug. Sept Oct Nov. Dec. Jan. Feb. Mar.

Anthracite operations are hard hit, as production has definitely outdistanced demand. Many independents are closed entirely, while others are experiencing heavy demurrage on coal, which is being offered at considerable reductions. Several companies are operating on part time and there is an increasing tonnage going to storage.

Beehive coke is sluggish. Prices for the first quarter of 1922 are not yet clearly defined, as consumers are apathetic. Nothing much but forced sales are moving on the spot market.

BITUMINOUS

Production has dropped back to the level of last April, normally the lowest month of the year. The output during the week ended Dec. 10 was 7,235,000 net tons, according to the Geological Survey, compared with 7,104,000 tons in the previous week. That the output during the remainder



Estimates of Production

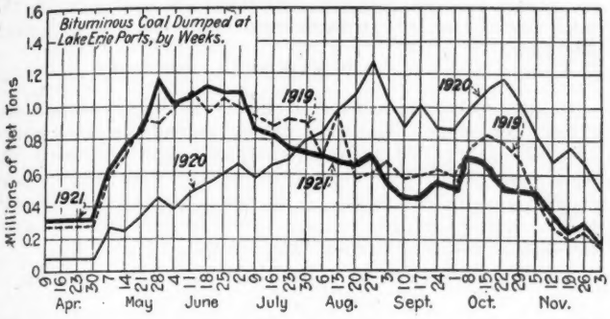
(Net Tons)

Week Ended	1921	1920
BITUMINOUS COAL		
Nov. 26 (b)	7,101,000	11,488,000
Dec. 3 (b)	7,104,000	12,812,000
Dec. 10 (a)	7,235,000	12,865,000
Daily average	1,206,000	2,144,000
Calendar year	386,439,000	521,207,000
Daily average calendar year	1,333,000	1,788,000
ANTHRACITE		
Nov. 26	1,677,000	1,708,000
Dec. 3	1,845,000	2,070,000
Dec. 10 (a)	1,703,000	1,933,000
Calendar year (b)	83,884,000	83,609,000
COKE		
Dec. 3 (b)	114,000	375,000
Dec. 10 (a)	111,000	374,000
Calendar year	5,160,000	19,941,000

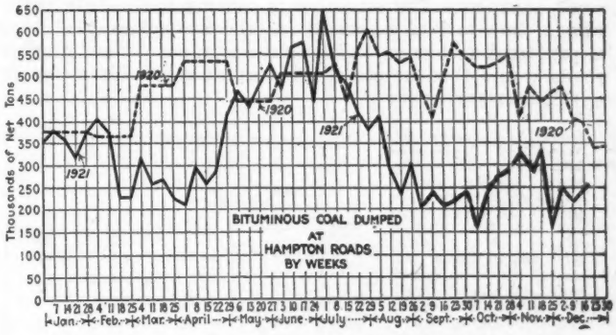
(a) Subject to revision. (b) Revised from last report.

of the year will continue around 7,250,000 tons per week is indicated by preliminary reports for last week—Dec. 12-17—showing an apparently unchanged rate of loading.

The cumulative output of 386,439,000 tons is 41,000,000 tons behind 1919, a year of depression. Demand has been so sluggish that the total production for 1921 will not exceed 405,000,000 tons. The last year in which the country used such a small amount was in 1909.



The last Lake cargo has been received at the Duluth-Superior harbor. Total receipts were 10,164,849 net tons, of which 8,320,207 were bituminous, larger than in any year since 1918. Preliminary reports of the season's coal dumpings indicate that a total of 23,300,000 net tons of soft coal were handled. Dumpings for the last week of the season were 171,387 tons, of which 163,841 tons were cargo and 7,546 tons vessel fuel.


Thousands of Net Tons
1920
1921
BITUMINOUS COAL DUMPED AT HAMPTON ROADS BY WEEKS
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.

Hampton Roads business is extremely quiet, the dumpings fluctuating around 250,000 tons weekly. Bunker business gives the most encouragement, as general shipping has increased slightly. Pier accumulations have decreased, but a few "market cargoes" in New England have kept prices soft. Shippers are interested in the efforts of Secretary Hoover to reduce rates on export coal by $1 a ton from

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

Low-Volatile, Eastern	Market Quoted	Nov. 21, 1921	Dec. 5, 1921	Dec. 12, 1921	Dec. 19, 1921†
Pocahontas lump	Columbus	$4.35	$3.75	$3.60	$3.50@$3.75
Pocahontas mine run	Columbus	2.35	2.25	2.20	*2.10@ 2.25*
Pocahontas screenings	Columbus	1.70	1.55	1.65	*1.45@ 1.70*
Pocahontas lump	Chicago	4.35	3.85	3.10	2.50@ 3.75
Pocahontas mine run	Chicago	2.65	2.25	2.25	2.00@ 2.50
Pocahontas lump	Cincinnati	....	3.10	3.25	3.00@ 3.50
Pocahontas mine run	Cincinnati	....	....	2.25	*1.75@ 2.50*
Pocahontas screenings	Cincinnati	....	....	1.40	1.25@ 1.50
*Smokeless mine run	Boston	4.80	4.80	4.80	4.75@ 4.90
Clearfield mine run	Boston	1.80	1.80	1.80	1.60@ 2.00
Cambria mine run	Boston	2.35	2.35	2.35	2.10@ 2.60
Somerset mine run	Boston	1.75	1.85	1.85	1.65@ 2.00
Pool 1 (Navy Standard)	New York	3.05	3.00	3.00	2.75@ 3.25
Pool 1 (Navy Standard)	Philadelphia	3.15	3.00	3.00	2.75@ 3.25
Pool 1 (Navy Standard)	Baltimore	2.70	2.40	2.30	**2.30@ 2.35**
Pool 9 (Super. Low Vol.)	New York	2.35	2.30	2.40	*2.15@ 2.30*
Pool 9 (Super. Low Vol.)	Philadelphia	2.45	2.35	2.35	*2.10@ 2.50*
Pool 9 (Super. Low Vol.)	Baltimore	2.40	2.05	2.10	**2.10@ 2.15**
Pool 10 (H. Gr. Low Vol.)	New York	2.05	2.05	2.05	*1.90@ 2.10*
Pool 10 (H. Gr. Low Vol.)	Philadelphia	2.15	2.05	2.05	*1.90@ 2.10*
Pool 10 (H. Gr. Low Vol.)	Baltimore	2.10	1.85	2.00	2.00
Pool 11 (Low Vol.)	New York	1.85	1.70	1.80	*1.60@ 1.85*
Pool 11 (Low Vol.)	Philadelphia	1.85	1.85	1.85	*1.60@ 1.80*
Pool 11 (Low Vol.)	Baltimore	2.00	1.75	1.75	1.75
High-Volatile, Eastern					
Pool 54-64 (Gas and St.)	New York	1.70	1.55	1.55	1.50@ 1.60
Pool 54-64 (Gas and St.)	Philadelphia	1.70	1.70	1.70	*1.45@ 1.70*
Pool 54-64 (Gas and St.)	Baltimore	1.65	1.60	1.45	**1.50**
Pittsburgh sc'd gas	Pittsburgh	2.65	2.65	2.70	*2.60@ 2.70*
Pittsburgh mine run (St.)	Pittsburgh	2.15	2.15	2.15	2.10@ 2.20
Pittsburgh slack (Gas)	Pittsburgh	1.40	1.35	1.55	1.50@ 1.60
Kanawha lump	Columbus	3.20	3.00	2.90	*2.75@ 3.00*
Kanawha mine run	Columbus	1.85	1.90	1.85	*1.75@ 1.90*
Kanawha screenings	Columbus	1.00	1.00	1.00	**.95@ 1.15**
Kanawha lump	Cincinnati	....	....	2.75	2.50 **2.25@ 3.00**
Kanawha mine run	Cincinnati	....	....	1.65	1.50 *1.25@ 1.50*
Kanawha screenings	Cincinnati	....	....	.95	1.15 **1.00@ 1.50**
Hocking lump	Columbus	3.15	3.10	3.05	*2.80@ 3.15*
Hocking mine run	Columbus	2.00	1.95	1.95	*1.85@ 2.00*
Hocking screenings	Columbus	$0.95	$1.15	$1.15	**$1.05@$1.25**
Pitts. No. 8 lump	Cleveland	3.10	3.05	3.15	*2.85@ 3.15*
Pitts. No. 8 mine run	Cleveland	2.00	2.00	2.05	*1.95@ 2.05*
Pitts. No. 8 screenings	Cleveland	1.30	1.50	1.55	**1.55@ 1.60**
Midwest					
Franklin, Ill. lump	Chicago	3.75	3.80	3.80	3.50@ 4.05
Franklin, Ill. mine run	Chicago	2.85	2.75	2.75	**2.75@ 3.00**
Franklin, Ill. screenings	Chicago	1.60	1.75	1.80	**1.85@ 2.25**
Central, Ill. lump	Chicago	3.35	3.35	3.35	*2.75@ 3.50*
Central, Ill. mine run	Chicago	2.50	2.25	2.50	2.25@ 2.75
Central, Ill. screenings	Chicago	1.35	1.70	1.70	**1.75@ 1.85**
Ind. 4th Vein lump	Chicago	3.50	3.35	3.35	3.00@ 3.75
Ind. 4th Vein mine run	Chicago	2.75	2.75	2.75	2.60@ 2.90
Ind. 4th Vein screenings	Chicago	1.75	1.90	1.90	**2.00@ 2.25**
Ind. 5th Vein lump	Chicago	2.80	2.80	2.80	2.60@ 3.00
Ind. 5th Vein mine run	Chicago	2.45	2.45	2.45	2.25@ 2.60
Ind. 5th Vein screenings	Chicago	1.50	1.50	1.55	**1.50@ 1.75**
Standard lump	St. Louis	3.10	2.85	2.80	*2.60*
Standard mine run	St. Louis	1.95	1.95	1.95	*1.90*
Standard screenings	St. Louis	.95	1.15	1.25	1.25
West Ky. lump	Louisville	3.00	2.60	2.75	**2.65@ 3.00**
West Ky. mine run	Louisville	1.90	1.75	1.75	1.50@ 2.00
West Ky. screenings	Louisville	1.00	.95	1.05	**1.25@ 1.50**
South and Southwest					
Big Seam lump	Birmingham	3.75	3.65	3.65	3.25@ 4.00
Big Seam mine run	Birmingham	2.00	2.00	2.00	**1.90@ 2.30**
Big Seam (washed)	Birmingham	2.30	2.30	2.30	*2.00@ 2.30*
S. E. Ky. lump	Louisville	3.60	3.00	3.15	*2.75@ 3.00*
S. E. Ky. mine run	Louisville	2.20	2.05	1.75	*1.65@ 1.80*
S. E. Ky. screenings	Louisville	1.15	.95	1.00	**1.00@ 1.25**
S. E. Ky. lump	Cincinnati	....	....	3.15	3.15 3.00@ 3.25
S. E. Ky. mine run	Cincinnati	....	....	1.75	1.55 *1.35@ 1.50*
S. E. Ky. screenings	Cincinnati	....	....	.85	.95 **1.00@ 1.25**
Kansas lump	Kansas City	5.00	5.00	5.00	5.00
Kansas mine run	Kansas City	4.25	4.10	4.10	4.00@ 4.25
Kansas screenings	Kansas City	2.50	2.50	2.50	2 50

*Gross tons, f.o.b. vessel, Hampton Roads.
†Advances over previous week shown in **heavy type**, declines in *italics*.

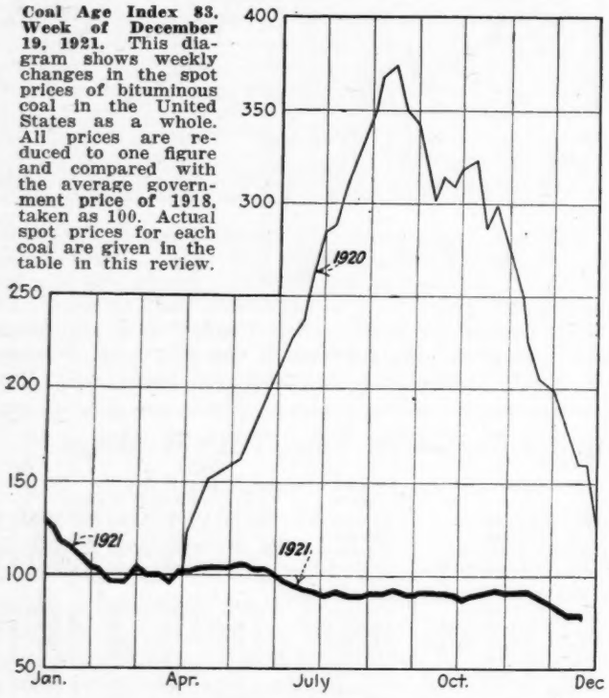
Current Quotations—Spot Prices, Anthracite—Gross Tons, F.O.B. Mines

	Market Quoted	Freight Rates	Dec. 5, 1921 Independent	Dec. 5, 1921 Company	Dec. 12, 1921 Independent	Dec. 12, 1921 Company	Dec. 19, 1921† Independent	Dec. 19, 1921† Company
Broken	New York	$2.61	.....	$7.60@$7.75	.....	$7.60@$7.75	.....	$7.60@$7.75
Broken	Philadelphia	2.66	$7.60@$8.00	7.75@ 7.85	$7.00@$7.50	7.75@ 7.85	**$7.50@$7.75**	7.75@ 7.85
Egg	New York	2.61	7.50@ 8.00	7.60@ 7.75	6.50@ 7.25	7.60@ 7.75	6.50@ 7.25	7.60@ 7.75
Egg	Philadelphia	2.66	7.75@ 8.00	7.75@ 7.85	7.25@ 7.75	7.75@ 7.85	7.25@ 7.75	7.75@ 7.85
Egg	Chicago	5.63	8.00*	7.15*	8.00*	7.15*	*7.50**	7.15*
Stove	New York	2.61	8.25@ 8.75	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10	*8.00@ 8.25*	7.90@ 8.10
Stove	Philadelphia	2.66	8.50@ 9.00	8.00@ 8.35	8.50@ 8.75	8.00@ 8.35	8.50@ 8.75	8.00@ 8.35
Stove	Chicago	5.63	8.50*	7.40*	8.50*	7.40*	*7.75**	7.40*
Chestnut	New York	2.61	8.25@ 8.75	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10	*8.00@ 8.25*	7.90@ 8.10
Chestnut	Philadelphia	2.66	8.50@ 9.00	8.05@ 8.25	8.50@ 8.75	8.05@ 8.25	8.50@ 8.75	8.05@ 8.25
Chestnut	Chicago	5.63	8.25*	7.40*	8.25*	7.40*	*7.75**	7.40*
Pea	New York	2.47	4.75@ 5.00	6.05@ 6.45	4.25@ 5.00	6.05@ 6.45	**4.75@ 5.50**	6.05@ 6.45
Pea	Philadelphia	2.38	4.75@ 5.00	6.15@ 6.25	4.25@ 5.00	6.15@ 6.25	4.25@ 5.00	6.15@ 6.25
Pea	Chicago	5.63	6.10*	5.80*	6.10*	5.80*	6.10*	5.80*
Buckwheat No. 1	New York	2.47	2.50@ 2.75	3.50	2.25@ 2.75	3.50	2.25@ 2.75	3.50
Buckwheat No. 1	Philadelphia	2.38	2.50@ 3.00	3.50	2.25@ 3.00	3.50	2.25@ 3.00	3.50
Rice	New York	2.47	1.50@ 2.00	2.50	1.60@ 1.75	2.50	**1.60@ 2.00**	2.50
Rice	Philadelphia	2.38	1.75@ 2.00	2.50	1.75@ 2.00	2.50	1.75@ 2.00	2.50
Barley	New York	2.47	1.00@ 1.25	1.50	0.75@ 1.00	1.50	**1.00@ 1.25**	1.50
Barley	Philadelphia	2.38	1.25@ 1.50	1.50	1.00@ 1.25	1.50	1.00@ 1.25	1.50
Birdseye	New York	2.47	.....	2.50	.....	2.50	.....	2.50

*Net tons, f.o.b. mines.
†Advances over previous week shown in **heavy type**, declines in *italics*.

Eastern producing districts to seaboard to meet increasing British competition.

All-rail movement to New England was 2,437 cars during the week ended Dec. 10, as compared with 2,786 cars the week previous. The situation is gloomy and a rate reduction is imperative, especially as the smokeless 1922 basis is predicted as low as $1.50 net f.o.b. mines. New England roads would thus be placed at a great disadvantage as regards carriers' revenue.



Coal Age Index 83. Week of December 19, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table in this review.

ANTHRACITE

Production of hard coal declined to 1,703,000 net tons during the week ended Dec. 10, representing a decrease of 142,000 tons as compared with the week preceding. The decline was partly because of the religious holiday but mainly due to the slackening demand. November production was 6,859,000 tons, smaller than in any November of recent years except in 1918, when the influenza epidemic was at its height.

Retail markets are affected by the unseasonable weather, while steam sizes reflect the condition in the bituminous industry. Some independent operators are closing, as they are unable to obtain satisfactory prices for their product, and many companies are either working part time or running coal to storage. The season's Lake movement was 3,814,487 net tons, as compared with 3,584,286 in 1920 and 4,156,218 in 1919. The sluggish demand at the end of the season cut down the big lead over 1920 shipments. Rail shipments to New England amounted to 3,245 cars in the week ended Dec. 10, an increase of 195 cars over the week previous.

COKE

Beehive coke production continues to hover around the 110,000-ton mark. The total output during the week ended Dec. 10 was 111,000 net tons, compared with 114,000 in the week preceding. Byproduct is competing with beehive coke on first-quarter contracts. A stagnant market prevails, due to the dullness in the iron and steel industry and but little interest is being shown by the buyers.

MONTHLY OUTPUT OF BYPRODUCT AND BEEHIVE COKE IN THE UNITED STATES (*a*)

(In Net Tons)

	Byproduct Coke	Beehive Coke	Total
1917 monthly average	1,870,000	2,764,000	4,634,000
1918 monthly average	2,166,000	2,540,000	4,706,000
1919 monthly average	2,095,000	1,587,000	3,682,000
1920 monthly average	2,565,000	1,748,000	4,313,000
August, 1921	1,402,000	248,000	1,650,000
September, 1921	1,423,000	289,000	1,712,000
October, 1921	1,734,000	416,000	2,150,000
November, 1921	1,766,000(*b*)	477,000	2,243,000

(*a*) Excludes screenings and breeze. (*b*) Subject to revision.

To manufacture the coke produced it is estimated that 3,289,000 tons of coal were consumed, of which 2,537,000 tons were used in byproduct ovens and 752,000 tons in beehive ovens. It will be seen that the coke industry now requires about 3,000,000 tons a month less than in 1920, a fact which explains in part the present subnormal demand for coal.

ESTIMATED MONTHLY CONSUMPTION OF COAL FOR MANUFACTURE OF COKE

(In Net Tons)

	Consumed in Byproduct Ovens	Consumed in Beehive Ovens	Total Coal Consumed
1917 monthly average	2,625,000	4,354,000	6,979,000
1918 monthly average	3,072,000	4,014,000	7,086,000
1919 monthly average	2,988,000	2,478,000	5,466,000
1920 monthly average	3,685,000	2,758,000(*a*)	6,443,000
August, 1921	2,015,000(*a*)	391,000(*a*)	2,406,000
September, 1921	2,044,000(*a*)	456,000(*a*)	2,500,000
October, 1921	2,491,000(*a*)	656,000(*a*)	3,147,000
November, 1921	2,537,000(*a*)	752,000(*a*)	3,289,000

(*a*) Assuming a yield in merchantable coke of 69.6 per cent of the coal charged in byproduct ovens, and 63.4 per cent in beehive ovens.

Foreign Market And Export News

GERMANY—Production of coal in the Ruhr region during the week ended Dec. 5 was 1,787,000 metric tons, according to a cable to *Coal Age*. The output for the week previous was 1,907,000 tons.

The reparations commission has sent to the German government a note calling for complete prohibition of the export of German coal to neutral countries.

SWEDEN—During the week ended Nov. 26 imports of fuel totaled 15,750 tons, of which 13,000 tons of coal and 2,540 tons of coke came from the United Kingdom.

BELGIUM—The situation in the coal market remains practically unchanged. A slight revival in industrial coal and in coke is noted. Quotations are mainly firm.

SPAIN—Railroads are being required by a royal decree to use a maximum amount of coal produced within the Kingdom. The decree was issued to meet the increasing tendency to use foreign coal, resulting in the domestic industry being left in desperate straits. Another royal order allows Spanish warships to take on foreign coal in certain harbors without import formalities.

There has been a slight rise in the price for small Asturian coal. Freights from Gijon are very firm to all ports. At Barcelona the following quotations are made: Large, 90 pesetas; small, 70.

On Dec. 16, 13,000 Asturian miners went on strike. The Communists and Socialists in the workers' unions appear to be divided in opinion relative to the acceptance of a reduced wage and the number of work days per week. The Communists are reported to be demanding a six-day week.

BRAZIL—During September, 1921, imports of coal at Rio de Janeiro amounted to 94,875 metric tons, as compared with 100,828 tons for September, 1920, according to *Commerce Reports*.

INDIA—There is considerable Welsh coal now on the Bombay market. Not much Bengal is in stock, as it is hard to compete with Welsh coal where port facilities are available, owing to the freight rates, but Bengal and other Indian coals meet the industrial demand in the interior of the country. Welsh coal is quoted at 44 rupees, c.i.f., Bombay. Bengal coal is steady; first is quoted at 32@33 rupees and good second at 28@32. Over 7,100 tons arrived from Abadan, 5,300 from Durban, 5,200 from Australia and 7,600 from Cardiff during the last week in October.

British Shippers Seek Lower Rail Freight Rates

Wages in South Wales, 28 Per Cent Over 1915 Level, Now at Bottom — London Prices Held Up While Export Prices Sag

PRODUCTION of coal in Great Britain during the week of Dec. 3 was 4,693,000 tons, practically the same as for the preceding week. Demand is improving and prices in general are firm or up.

Newcastle best steam coal is now 24s. 6d. and there is a fairly steady demand. Good gas coke is being sold for 45s. and other gas cokes at 40s.; foundry and furnace coke is 32s. 6d. The Gothenburg gas works has placed an order for 4,000 tons best Durham gas coals, though the price is not given. The Bombay and Baroda Railway is in the market for 60,000 tons. Open market quotations are: Best steams, Tynes, 24s.; Blyths, 25s.; second steams, Tynes and Blyths, 22s. 6d.; small steams, Tynes, 13s.; Blyths, 22s. 6d; unscreened steams, 19s.@22s.; gas bests, 22s. 6d.; seconds, 20s., 21s.; specials, 23s.; unscreened bunkers, bests and specials, 21s. 22s.; Northumbrians, 19s., 21s.; Durhams, 20s.; coking coals, 20s., 22s.; export households, 25s.-27s. 6d.; furnace coke, 30s.; gas coke, best, 45s.; ordinary, 40s.

The Mining Association, representing the owners, is urging the railway companies to reduce transport charges on coal, and in support of their case give the following figures: The output of coal in 1913 was 287,000,000 tons; in 1920, 229,000,000 tons, and in 1921, based on September, 205,000,000 tons. Industry has consumed 25 per cent, or 43,000,000 tons less, and shipments for bunkering or export show a reduction of 39,000,000 tons, or 40 per cent. Shipments of coke have declined 65 per cent, or 800,000 tons, and patent fuel 30 per cent, representing 600,000 tons. The current production of metallurgical coke is at the rate of 2,480,000 tons, against 12,700,000 tons in 1913.

On the October audit figures the wages in South Wales for December are 28.03 per cent over the 1915 standard. On this basis the wage rates will vary from 6s. 4.8d. to 8s. 1¼d. per day, which is stated to be the lowest figures to which wages in the South Wales area will go. The lowest-paid men will be granted a special subsistence allowance which will bring their minimum up to 7s. 2d. per day.

Lancashire, Cheshire and North Staffordshire miners will undergo a December cut of 2.25 per cent on the November rates. On the October ascertainment the miners in the Forest of Dean area will receive an advance of 1d. per shift. These men are now working six shifts per week and their wages amount to slightly more than 45s. per week, which is a reduction of 11s. on the January rates.

The London press has initiated a campaign against the high prices of London coal. *The Daily Mail*, which is generally recognized as being the most influential daily in London, is particularly active in this direction. At the present time the price of best household coal in London varies from 49s. 6d. per ton in some districts to 63s. in others. The fact that coal which costs the householder 65s. is produced at the pithead for 40s. is arousing a storm of protest. Apparently there is a "ring" of coal dealers in London which is determined to maintain prices to the householder (who has no organization or trade union) irrespective of wage cuts and lower production costs. It is probable that a boycott of this ring will result.

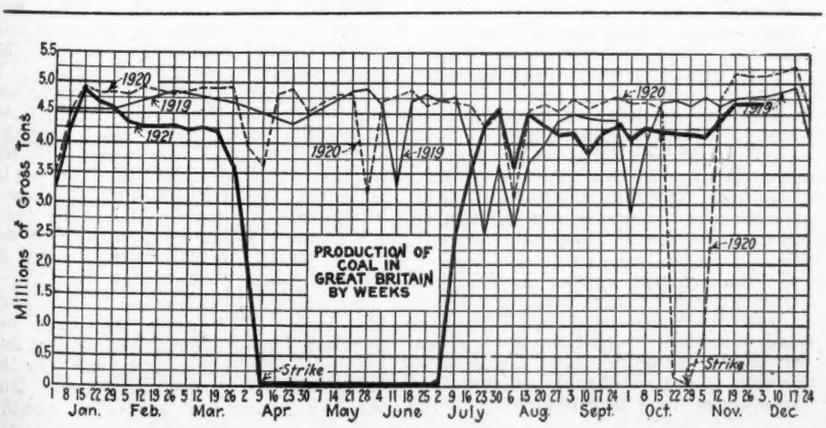
Hampton Roads Business Dull

Business was extremely dull last week, except for some activity in the bunker trade. New England shipments have not materially changed from their low ebb of the last few weeks.

Pool 1 prices have dropped, coal of this grade being offered in some specific instances at $4.65, although the general quotation is no lower than $4.75. Some Pool 2 sold last week for $4.45, while pools 5, 6 and 7, in which supplies are practically absent, with no demand, are selling as low as $4.15.

General shipping during the last ten days has shown a slight increase, with a consequent increase in the bunker business, practically every ship which puts into port taking bunkers, either in oil or coal. Freight rates to foreign ports, having reached what is regarded as their lowest possible point, have shown little or no change this week, and it is believed they will not go lower at any time soon. Rates to New England are unchanged, the rate to Boston being 95c.@$1, with the lower figure more frequently quoted.

Trimming charges, reduced this month at Hampton Roads piers by 20 per cent, are being tried out as an experiment by the shippers, to determine whether they will ask for a further reduction. Shippers have not had an opportunity, they say, to fully test the new rates.


PRODUCTION OF COAL IN GREAT BRITAIN BY WEEKS
Millions of Gross Tons
1920
1919
1921
Strike
Jan. Feb. Mar. Apr May June July Aug. Sept. Oct. Nov. Dec.

Pier and Bunker Prices, Gross Tons

(Foreign Bunker Quotations by Cable to Coal Age)

	Dec. 10	Dec. 17†
PIERS		
Pool 9 New York	$5.40@$5.50	$5.40@$5.50
Pool 10, New York	5.25@ 5.35	5.25@ 5.35
Pool 9, Philadelphia	5.50@ 5.60	5.50@ 5.60
Pool 10, Philadelphia	5.25@ 5.50	*5.25@ 5.45*
Pool 71, Philadelphia	5.75@ 6.00	*5.75@ 5.90*
Pool 1, Hamp. Rds.	4.70	4.65@ 4.75
Pools 5-6-7 Hamp Rds	4.25	*4.15@ 4.25*
Pool 2, Hamp. Rds.	4.60	*4.45@ 4.55*
BUNKERS		
Pool 9, New York	5.70@ 5.90	5.70@ 5.90
Pool 10, New York	5.55@ 5.65	5.55@ 5.65
Pool 9, Philadelphia	6.00	6.00
Pool 10, Philadelphia	5.65@ 5.85	*5.65@ 5.75*
Pool 1, Hamp. Rds.	4.80	*4.75*
Pool 2, Hamp. Rds.	4.70	*4.60*
Welsh, Gibraltar	40s. f.o.b.	40s. f.o.b.
Welsh, Rio de Janeiro	65s. f.o.b.	65s. f.o.b.
Welsh, Lisbon	45s. f.o.b.	45s. f.o.b.
Welsh, La Plata	62s. 6d. f.o.b.	62s.6d. f.o.b.
Welsh, Marseilles	120 fr. f.o.b.	**125** fr. f.o.b.
Welsh, Genoa	40s. t.i.b.	40s. t.i.b.
Welsh, Madeira	42s.6d. f.a.s	42s.6d. f.a.s.
Welsh, Teneriffe	42s 6d. f.a.s.	42s.6d. f.a.s.
Welsh, Malta	45s. f.o.b.	45s. f.o.b.
Welsh, St. Michaels	60s. t.i.b.	60s. t.i.b.
Welsh, Las Palmas	42s. 6d. f.a.s.	42s.6d. f.a.s.
Port Said	51s. 6d. f.o.b.	51s.6d. f.o.b.
Belgian, Antwerp	40s. f.o.b.	40s. f.o.b.
Alexandria	46s. f.o.b.	*45s.*
Bombay	38 rupees	38 rupees
Capetown	42s. 6d.	42s.6d.

C.I.F. Prices, American Coal

(In Gross Tons)

	—Dec. 10— Low Vol.	High Vol.	—Dec. 17†— Low Vol.	High Vol.
French Atlantic	$8.70	$8.50	**$8.75**	$8.50
West Italy	8.70	8.50	**8.75**	8.50
The Plate	8.90	8.70	8.90	*8.65*
Havana	6.75	6.50	6.75	6.50

These quotations are purely nominal and as far as can be learned, no business is being done in these markets.

Current Quotations British Coal f.o.b. Port, Gross Tons

Cardiff:	Dec. 10	— Dec. 17† —
Admiralty, Large	26s.	25s.6d.@26s.6d.
Steam, Smalls	18s.	**18s.6d.@19s.6d.**
Newcastle:		
Best Steams	24s.9d.	*24s.@25s.*
Best Gas	22s.3d.	22s.@22s.6d.
Best Bunkers	21s.6d.	**21s.6d.@22s.6d.**

†Advance over previous week shown in **heavy type**, declines in *italics*.

Export Clearances, Week Ended Dec. 15, 1921

FROM HAMPTON ROADS:

	Tons:
For Africa:	
Br. S.S. Heathfield, for Dakar	6,902
For Canal Zone:	
Am. S.S. Cristobal, for Cristobal	9,678
For Chile:	
Nor. S.S. John Blumer, for Curaco	3,328
For Cuba:	
Am. S.S. Glyndon, for Cienfuegos	1,976
Nor. S.S. Gro, for Havana	6,442
Br. S.S. Muneric, for Havana	6,596
Nor. S.S. Harriet, for Sagua la Grande	2,045
For Peru:	
Br. S.S. Shelley, for Callao	2,501
FROM PHILADELPHIA:	
For Cuba:	
Swed. S.S. Gothia, for Havana	——

Hampton Roads Pier Situation

	— Week Ended — Dec. 8	Dec. 15
N. & W. Piers, Lamberts Point:		
Cars on hand	1,520	1,559
Tons on hand	76,801	76,061
Tons dumped	104,583	121,650
Tonnage waiting	17,050	8,300
Virginian Ry. Piers, Sewalls Point:		
Cars on hand	1,680	1,095
Tons on hand	84,000	54,750
Tons dumped	47,553	70,852
Tonnage waiting	5,000	1,800
C. & O. Piers, Newport News:		
Cars on hand	1,174	1,184
Tons on hand	58,700	59,200
Tons dumped	40,607	36,362
Tonnage waiting	1,623	.....

Reports From the Market Centers

New England

BOSTON

"Market Cargoes" Leave Depressing Effect — Much Interest in Rate Question—Curtailment General in All Districts — Anthracite Slackens — Retail Prices Not Stable.

Bituminous—In the judgment of many of the trade the market here is more generally unsatisfactory than at any time in several years. While certain factors are holding their quotations on a firmer basis, there are no sales being made on those levels. The few consumers who are actually buying are able to get all they want at bargain prices. Receipts from Hampton Roads have sagged notably the past fortnight, due to growing conviction on the part of the smokeless agencies that it is futile to try forcing tonnage on so reluctant a market. Steam users generally have such ample reserves, considering business prospects, that they will have little interest in offerings during the next 30 days.

There remain a few "market cargoes" to be disposed of. Three small cargoes recently had to be sold at an average price of $5.35 alongside, and certain others are being hawked about the territory around $5.50 on cars. More than anything else, this gives a significant sidelight on the current market.

With so discouraging a background, it is only natural there should be discussion of next season's business. The outcome of the smokeless operators meeting on Dec. 8 left anything but a favorable impression. Recent price developments in the bunkering business at Hampton Roads have also had a depressing effect and certain interests are freely predicting $1.50 as a probable base price per net ton f.o.b. mines. Should there be any such price, it will leave very little territory here for Pennsylvania mines to supply.

There is renewed interest here in the possible reduction of railroad rates. Mr. Hoover's recommendation that tolls to Atlantic ports be reduced $1 per ton has attracted notice and there is general agreement among the trade that some such move will have to be made if we are not to relinquish export business. At the same time, all-rail tariffs need rectifying quite as much. To leave the New England situation as it is will not only give waterborne coal an unfair advantage, but it will cripple the New England railroads so far as operating income is concerned.

In Central Pennsylvania numbers of operations are existing almost solely on contracts for railroad fuel. Were it not for these, the all-rail movement into New England would be very much lighter than current figures show. Sales agents are struggling to place coal, and all kinds of low prices are the result. This condition shows up more particularly where coal is on demurrage at Philadelphia and New York piers.

Anthracite—Demand for domestic sizes seems progressively less from week to week. Independent shippers are hard put to it to move egg and pea and quotations are still receding. The old-line companies are of course able to put these sizes in storage when there is lack of orders. Water transportation is more than plentiful and several tugs and barges have been put out of commission because of slack business.

Retail trading shows no sign of bracing up. Prices are on so high a level that small dealers are tempted to shade the current list and unless trade improves the next few weeks it is quite likely there will be a more or less ragged situation at retail.

Tidewater—East

NEW YORK

Slow Anthracite Demand—Independent Quotations Softer — Bituminous Shows Little Change — 1922 Inquiries Appear —Less Distress Coal.

Anthracite—If anything, conditions are quieter than they were last week. A reflection in the situation can be seen in the mining regions where several thousand workers are idle because of the lack of orders. Retail yards are filled and dealers are not taking on any additional tonnage.

There is considerable coal at the local piers and between Tidewater and the mines. Most of the companies have stocked considerable coal and others are now storing the bulk of production. Independents have cut their prices to a point where to sell at lower prices would be to dispose of their output at a cost below that of production.

The low temperatures last week did not have any beneficial effect on the market. Egg and pea are quiet with little movement in either. Quotations as low as $6.50 were reported on egg coal. The average low figure was about 50c. higher.

Pea was easy and although it was said some grades were being offered at around $4.50 it was added this was either washery or distress coal.

There have been many inquiries regarding buckwheat which indicates to the trade that the market for it will soon improve. Rice and barley are moving slowly.

Bituminous—Although present conditions are dull local houses are beginning to receive inquiries as to what might be expected in prices for deliveries during the first three months of 1922. Most consumers have several weeks' supply on hand and with the discontinuance of the war tax on Jan. 1 and the uncertainty of the freight rate situation they are not inclined to buy any more coal than they actually need.

Several vessels arrived in this harbor last week with partially consigned cargoes of Southern coals. The tonnage available for spot buyers was being offered at $6 for Pool 1 and $5.75 for Pool 2, both alongside delivery.

Some coal men look favorably on the outlook for next year. They claim that there is a comparatively small tonnage in consumers' bins and with the termination of the present wage scale on March 31 it is expected there will be heavy buying shortly. They all look to an increase in the steel buisiness which will result in a better coal market.

The market is getting into a healthier state, due to the closing down of many mines and the shipping of less coal to this point. Although this has not increased prices it will benefit conditions.

While there are no further reports of English coal being brought into this market as ballast and then sold here, it has been reported that some foreign coals have been carried into Boston and sold there in competition with domestic fuels. Quotations for spot coals do not show much change.

PHILADELPHIA

Anthracite Helped by Colder Weather —Dealers Almost Cease Ordering—Independent Quotations Slump — Bituminous Dullness Persists—Prices Still Soft.

Anthracite—The arrival of the coldest weather of the year, prevented a complete shutdown in the anthracite industry. Despite this there has been no rush on the part of the consumers to purchase, while the retailer has continued to work from stock rather than order from the shippers.

Barring the prevalence of extreme weather, there is no one in the trade who expects a revival before the New Year. Always on the approach of the holiday season there is a decided falling off in sales. Owing to present conditions a number of mines have already curtailed working time, while the others are hoping conditions will so shape themselves as to permit operation up to Christmas Day.

This week only chestnut is in any kind of demand, and even this size is not urgently wanted. There are numerous cases where this has been refused for lack of room to store it. There is not a company that does not have a surplus of every size on hand, much of it being on demurrage.

The week also saw the first real break in prices, as some of the independent shippers were compelled to make drastic cuts on egg and pea in an effort to move them. One independent shipper notified customers of a reduction of egg to $7.75 and pea $5.75 until further notice, although still asking the premium figures for stove and nut.

The dealers report an improved demand for the week, but are firmly convinced that it will take most unusual weather to bring the demand up to the point of normal activity. The consumer is very loathe to order in any quantity, the greater portion of the orders being for single ton lots.

In the steam sizes there is no change and buckwheat has sold recently at $2.50@$3, with but a light tonnage moved. Rice finds few takers. Barley is still in fair demand, but can easily be bought below $1.50 when the buyer is inclined to shop around. The companies are putting their surplus of the steam sizes into the storage yards in unusually heavy quantities.

Bituminous—Production is at a very low level. Ordinarily December has not been a good month for business and has been even less so this year. As the consumer has seen the price drop steadily during the past nine months,

he is not yet convinced that the lowest level has been reached, even though he knows that the prices are not profitable to the producers. There is some hope expressed that on account of postponed purchasing during December there will be at least a small measure of revival after the first of the year.

It is with the greatest difficulty that prices are held from utter collapse and is probably due more to the fact with the mines on short time there is no accumulation to upset the market. However, despite this for the past two weeks there has been an inclination to shade prices and some of the better houses have followed suit.

BUFFALO

Trade Still Quiet, but Cold Weather Helps Anthracite—Bituminous Stocks Preclude Further Buying.

Bituminous — Demand promises to continue light for a considerable time. Somehow the trade has managed to forget that there were large profits but little more than a year ago, in which all had a chance to share. At the same time some who did plunge heavily in those days are now proposing to settle with their creditors on a percentage. Still the trade does not seem to realize that flush times are more unsettling than lean times and should be regarded with distrust. Today, as a rule, the shippers in this trade who were careful are doing much better business than those who plunged.

Consumers have about all they can carry and so must buy more slowly, for actual consumption does not increase very visibly. Still Buffalo is using a goodly amount of coal. People are divided as to how much publicity should be given to the complaints that come from the stagnant trades. Some say that the best should be made of it all, as it would tend to improve the conditions, but the people most concerned do not offer much assistance.

Quotations continue at $2.75 for Youghiogheny gas lump, $2.50 for Pittsburgh and No. 8 steam lump, $2.25 for Allegheny Valley and all mine run, $1.50@$1.75 for slack.

Anthracite—Independents are cutting the circular a dollar or more to keep going until the turn in the demand sets in. Not in a long time has the movement into consumers' hands been so light at this time of the year.

The buying in small amounts is more general than usual. Some consumers are still waiting for lower freights or something else to reduce prices. Others are short of money. Again the notion still holds with some that the prices are so high that they must come down of their own weight if the holding off is kept up.

Lake—Shipments ceased on Dec. 9, an early date, but the shippers had not been anxious for tonnage for a month and loadings ran down so that the big lead over the former season fell off rapidly. The demand for tonnage was so light that only a few cargoes paid more than the ordinary summer freight.

The shipments for the season amounted to 3,814,487 net tons, as against 3,584,286 tons in 1920. The shipment for 1919 was 4,156,218 tons, for 1918 it was 2,913,103 tons, and for 1917 it was 4,137,004 tons.

Coke—The situation does not change materially. Local furnaces are running a little faster than they were, but they do not ask for much coke outside of their regular supply. The prospect is for a quiet winter. Jobbers quote 72-hr. Connellsville foundry at $4.15, 48-hr. furnace at $3.15 and stock at $2.75.

BALTIMORE

Little Enthusiasm Shown in Bituminous — Market Is Flat — Hard Coal Situation Is Also Unsatisfactory.

Bituminous—The soft coal market is still in the grip of an era of low prices, due largely to extremely keen competition. In selling under such a market there is little room for any real profit.

As a matter of fact, not a few of the producers are running at actual loss, while middlemen, after they have charged off demurrage and other costs, frequently find themselves operating without profit. It is truly a most unsatisfactory period for soft coal men. Conditions covering the export and bunker business also are unsatisfactory.

Only one vessel has cleared so far in December with less than 6,000 tons of coal on cargo account. There is much talk in the air that following the arms conference in Washington there will be a move of a financial nature made along international lines that will reestablish a better condition of exchange. Should this occur it seems undoubted that a great improvement will take place in the matter of export coal trading, as contract after contract inquiry has fallen through because of failure to adjust the exchange question.

Anthracite—Dealers report that business continues below normal. The weather has been colder but not severe enough to cause any spurt in ordering and receipts are comparatively light. There is enough reserve in the yards here to take care of emergencies, and no one is willing to stock up coal on which there is not likely to be a lively call.

Inland West

CLEVELAND

Slack Continues Firm—Industrial Buying Dull—Early Meeting on Lake Rates Planned—"Contract" Inquiries Appear.

Save for some betterment in the demand for slack and a gradually improving retail movement, the coal market remains lifeless. Industrial stocks are low, but apparently are sufficient to carry plants over into the New Year. Low operations, partly seasonal and partly due to general conditions, are causing the drain upon stocks to be exceedingly light. Consumers' attitude toward coal stocks is much the same as toward other materials; they want the year-end inventories to show the healthiest position possible.

Industrially the past week has brought forth some queer twists. The mainstay of the section, iron and steel and all metal working industries, are undergoing a considerable contraction of activities. On the other hand, the rubber industry is meeting with unexpected successes in its spring sales campaign.

In the meantime the coal trade is giving heed to next year's business. Inasmuch as reduced freight rates are not believed probable before next spring some consumers have indicated they will soon come into the market for contract coal. Consumers also are closely following developments in the mine labor situation and the first tangible indications that a strike may come will be followed by a demand for supplies. The drastic slump in output of prepared sizes has resulted in a shortage of slack.

A call is to be issued soon for a conference in Cleveland in January between coal operators interested in Lake shipping, railroad men and dock operators. The purpose of the meeting is to devise some policy on freight rates from the mines to the lower docks for next season.

Receipts of bituminous coal for the week ended Dec 10, rebounded from the low volume of the past few weeks, showing an increase of 205 cars; the total amounted to 866 cars, divided; industrial 657, retail 209. The increase was almost entirely in steam coal for industrial concerns.

DETROIT

Sales Are of Small Volume—Inventory Period Defers Purchases — Retailers Get Slight Stimulus — Prices Nominal.

General lack of buying interest continues. Sales made are small and the disposition appears to be toward delaying commitments. Offerings of high-grade coal, that in previous years has been in keen competition among large consumers, attract little attention.

Seasonal conditions are an influence in curtailment of buying. Operations which have been on a low degree of activity for several months are further reduced by the falling off in demand that precedes the holidays.

With a desire to embody in annual balance sheets figures showing as strong a position as possible in cash resources and a minimum of investment in materials and supplies, buyers are taking only such stock as is absolutely necessary to meet current requirements.

Domestic buying is curtailed by the extensive unemployment. Lower temperatures of the last few days has given a slight stimulus to the demand, but this business has not yet expanded to a degree that brings new orders from dealers.

Quotations are of a rather nominal nature. Smokeless lump and egg is $4 @$4.50; mine run $2.25@$2.50; nut and slack $1.25@$1.50. West Virginia lump is $3@$3.25; mine run $2; nut and slack $1.15@$1.25. Ohio lump is $2.75@$3; mine run $1.75@$1.90; nut and slack $1@$1.25.

INDIANAPOLIS

Retail Prices Follow Downward Trend at Mines — Non-Union Quotations to Depress Local Figures.

Byproduct coke, produced in Indianapolis has been reduced $1.50 a ton, and this has been followed by a cut of $1.75 in the retail price. Eastern Kentucky and West Virginia retail prices also have been cut 25c.@75c.

Dealers say the lower retail prices are natural adjustments. Prices at the mines have been reduced recently and the reductions represent in a retail way several small cuts in wholesale costs made recently. Competition of non-union mines probably will force lower prices at Indiana and Illinois mines.

The retail business has been unusually light. Consumers are not stocking up as heavily as they did last year. Sales indicate they generally are buying for immediate needs only. Revised prices are: Linton No. 4 lump,

$6.75@$7; egg, $6.50@$6.75; mine run, $6.25; southern Illinois egg, $7.75@$8; lump, $8@$8.25; West Virginia lump, $8.75@$9; Hocking Valley lump, $8@$8.50; Pocahontas mine run, $8.50; lump, $10.50.

CHICAGO

Domestic Market Demoralized—Salesmen Withdrawn from Road — Eastern Offerings Undercut Local Fuel.

The market is inactive on both steam and domestic coals. As is true at nearly every industrial center in the Middle West, the market on screenings and steam coals of a like nature have been strengthening, but so far as domestic coal is concerned, the market is practically dead. Sales agents have been withdrawing their men, as it seems a waste of time and money to keep them on the road.

Those on the inside claim there is going to be a crop of failures after Jan. 1. The trade last year and during the war had a great many newcomers listed in its records. These cut quite a figure while the cutting was good, and many of them made money very rapidly. Lacking, however, the experience of years in the coal business these gentlemen did not conserve their resources and this past year has just about lost them their previous earnings. Numerous mines were opened, which produced off-grade coals. These mines can only be operated when there is a great shortage, and as this time is past these properties have slowly languished until practically all of them are now closed. Even with this tonnage off the market, too much coal is being produced.

Eastern coals continue to be the big bear of Midwest operators. One Eastern firm flooded the Chicago market with a circular offering smokeless for $1.90 for spot shipment. Quotations direct to the trade at $1.90 a ton caused considerable dissatisfaction, especially among the large retail firms who contracted early in the season for Pocahontas at prices ranging $3@$4 for mine run. Very little consignment coal has been found in Chicago during the past few days. What little did come in was from the Illinois and Indiana mines, rather than from Eastern operators.

The Chicago market on eastern Kentucky as well as West Virginia coal has been badly demoralized, and during the week it was possible to get good West Virginia block as low as $2.25, while egg from the same districts sold frequently at $1.75. Anthracite is extremely sluggish, but prices are being held firm at circular.

COLUMBUS

Holiday Quietude Grips the Market—Domestic Quiet — Screenings Stronger —All Reserves Heavy.

Coal markets are the dullest in many months. It is now a hand-to-mouth proposition and will require some industrial activity, coupled with extreme cold weather, to inject any life into the trade.

Domestic is slow in every way because of the warm weather and bad industrial conditions. Dealers' stocks are heavy and they are devoting their attention to cleaning up. Stocks are of higher priced coal and since credits to consumers have been extended to a large degree, retailers are not in a position to take on any more tonnage. Retail prices are still weak and somewhat irregular. Hocking lump is selling $5.75@$6.25. West Virginia splints are $6.75@$7.50, depending on grade and size, Pocahontas is selling around $9.

Steam trade is at a standstill. Many concerns are closing down for the end of the year's stock-taking. Railroad demand is not large and public utilities are about the only purchasers of consequence. Owing to a reduction in the lump production more strength has developed in the smaller sizes.

Lake trade is over and the figures for the year show a fairly active season. The H. V. Docks at Toledo loaded a total of 4,538,531 tons during the season as compared with 4,008,112 tons in 1920. The T. & O. C. Docks loaded 1,096,515 tons as compared with a total of 1,785,250 tons last year.

The Hocking Valley field, including Pomeroy Bend and Crooksville, is loading but 15 per cent of normal while Cambridge is doing no better.

CINCINNATI

"No-Bills" Disappear—Market Steadier but Demand Still Light—Retail Market Quiet.

The decided curtailment of production in the past few weeks has shown an effect. Some coals have nearly doubled in price, while others that have been wobbling around have steadied to a degree that makes definite quotations possible.

Perhaps the greatest contributing factor to this change is the wiping out of the "no bills" and surplus coal that has stood at the front door of this gateway for several weeks. Portsmouth scales reported that from a thousand cars in excess of normal this had been cut down to a hundred. The DeCoursey yards of the L. & N. have also been pretty well cleared. In the face of this, however, rejections still continue high and inquiries have little of the old-time snap.

The retail situation has veered around a little more in line with the wholesale reductions. Some of the smaller companies have broken away from the long-established figures and are offering smokeless lump at $9@$9.50; mine run $7@$7.50 and slack, $6. Quotations on bituminous are: Lump, $7@$7.50; mine run, $6@$6.50 and slack, $4@$5. Mine prices are shown in the Weekly Review.

ST. LOUIS

Weather Conditions Bring Coal Business to Standstill—Price Cuts Fail to Stimulate—Country Demand Unusually Light.

St. Louis continues to see a lagging market that threatens to demoralize prices if it continues much longer. Standard coal is moving on such orders as are being placed and these call for small quantities.

The Mt. Olive & Staunton Coal Co., feeling that Standard coal was getting away with such business as existed, cut their St. Louis price from $3.50 at the mine to $3. The Standard operators immediately brought the price of 6-in. lump down to $2.75 and lower and 2-in. lump to $2.25, so that the Mt. Olive situation is no better off now than it was before the cut was made. The retailers, however, have not as yet cut their prices.

There is no anthracite or smokeless moving and the deliveries of coke have fallen off to a remarkable extent since the first of the month. The movement beyond St. Louis is light. A little moves to Kansas City and in straggling lots to St. Joseph and Omaha markets, while some steam sizes move to Chicago.

Canada

TORONTO

Cold Weather Stimulates Trade—Supplies Plentiful—Bituminous Still Quiet.

Retail trade has considerably improved during the last few days with the setting in of cold weather and dealers are receiving good orders from domestic consumers though the volume of business is by no means as large as usual at this season.

There are plentiful stocks of all grades in the yards. There is no change as regards bituminous which is selling very slowly, the market being still overstocked.

Quotations are as follows:

Retail:	
Anthracite egg, stove, nut and grate	$15.50
Pea	14.00
Bituminous steam	10.25@10.75
Domestic lump	12.00
Cannel	16.00
Wholesale f.o.b. cars at destination:	
¾-in. lump	7.00@ 7.75
Slack	6.00@ 6.75

Northwest

MILWAUKEE

Market Continues Dull—Last Cargoes Being Received—Reduction in Gas Coke.

Dealers are waiting patiently for a change of luck, which must necessarily come in the form of cold weather. With the holidays at hand and little snow or ice, the situation is not promising. Orders are few and far between, and small in quantity.

The market is well supplied and there is no danger of a shortage. Prices are held steady, with the exception of coke. Small size gas coke is now being advertised at $10 per ton, a reduction of $1. A new addition to Milwaukee's dock firms is offering Elkhorn at $10 per ton, for nut, and $9.50 for pile run, delivered into bins.

Eight cargoes reached port thus far in December, and there are still two or more cargoes coming. Seven were anthracite and aggregated 51,690 tons. There was one 7,000 ton cargo of soft coal. This brings the season's receipts thus far up to 1,009,662 tons of anthracite, and 2,586,302 tons of soft coal, or 3,595,964 tons in all, against 873,003 tons of anthracite, and 2,376,178 tons of soft coal, or 3,249,181 tons during the entire season of 1920. These figures do not include carferry or rail receipts.

MINNEAPOLIS

Market Is Backward Due to Mild Weather — Concessions Necessary to Move Coal—Retail Coal Prices Steady.

There have been occasional samples but no real winter yet. This is a thin basis upon which to attempt to market coal against a reluctant and backward buying brigade. But that is what the coal trade has been working against, and it is not surprising that they have accomplished so little. There is no

chance of selling beyond a limited store to any purchasers.

Cut prices have been the rule on dock coals, practically everything except hard coal having been cut by some firms. All-rail coal has been moving on very narrow margins. The only basis on which sales could be made seems to be at cut prices.

There remains hardly more than four or five weeks of time during which prices may be expected to get much support from the winter. After the middle of January the edge is usually off the buying. There seems to be little hope to establish a steady market at the list prices on dock coals, while the all-rail market is tolerated only on the basis of concessions.

As yet retailers locally have not suffered much from cutting prices. If there has been cutting it has been limited. This, too, may be expected before long, for there are a number of newcomers in the retail field, and in a field of beginners there are always some who stand ready to experiment with cut prices as a means of building up business.

About all that can be said for the prospects for the market is that they are probably not materially different from those of many other commodities. In numerous lines dealers are facing a pressure for lower values while holding goods which cost them more money. But they are generally better off than the coal trade in that it is possible for them to buy new goods at low prices, average between high and low costs and sell on the basis of the average.

The price of gas coke, prepared to regular sizes, has been cut $1.50 at retail, making the price $14. The local plant announces an expectation that freights will be cut next year as a reason for anticipating it with a cut in price. It has been sold in this market as a substitute for hard coal. Some have half expected that this will result in a cut in anthracite but this seems exceedingly unlikelv.

DULUTH

Receipts Adequate—Market Is Quiet—Both Steam and Domestic Slow.

The last cargo of coal has arrived at the Head-of-the-Lakes and the docks are full. It is estimated that considerably more than 5,500,000 tons are in storage.

Receipts from Dec. 1 to the close of navigation totaled 31.360 tons of bituminous and 25,710 of anthracite. Six cargoes were received last week of which three were hard coal.

During 1921 there were received at this port 10,164.849 tons, 1,134,183 tons more than last year, an increase of 12.56 per cent. To make up this increase hard coal went 207,195 tons above last year's figures to 1,844,642 tons, and soft coal receipts were 8,320,207 tons, a gain of 926,998 tons. In all 1,071 boats arrived here with coal this year against 1,029 last year and 1,028 in 1919. The average yearly tonnage received for the last five years is 10,104.828.

Shipments to the interior continue light. Dealers believe that people are burning wood to a great extent throughout northern Minnesota and Wisconsin, being enabled to do this by the mild weather. Manufacturing and mining is practically at a standstill, which has reduced the movement of industrial coal.

Prices have not changed with the exception of buckwheat, which is offered at retail by one firm at $7, or $1.50 lower than the dock list price. Other firms are not meeting this cut, although all are generally known to be overstocked with this size.

West

SALT LAKE CITY

Colder Weather Enlivens Retail Market — Price Increase Criticized — Employment Outlook Improves.

Retailers report a brisk business, due to the cold weather which has set in. There is much discontent at the rise in price, announced a week ago, as it came at a time when everyone thought there would be a decrease.

The announcement by the Utah Copper Co., that the mines at Bingham Canyon would reopen on April 1, was received with much satisfaction by local coal interests. About 2,000 men may be employed to start.

DENVER

Unseasonable Weather Hits Production — Miners Strike Ineffective — Troops Not Removed.

Unseasonable weather caused a drop of 60,000 tons in the weekly tonnage within three weeks, necessitating the temporary shutdown of a number of mines, including several of those that had been reopened only a short time before, following the strike. Troops will not be withdrawn from the coal fields, as petitioned by the union. The strike is virtually ended, but enough men affiliated with or as sympathizers of the union are making it necessary to police the district. Notices of the return to 1917 wages are being filed by many companies. Rockvale bituminous lump retailed a year ago at $12; today, under the reduction of $1 inaugurated by the Colorado Fuel & Iron Co., it is $11, while nut is $10.50. Trinidad slack is $6.90.

There are about 2,500 men out of work in the various fields because of the cessation of operations where the reduction of $1 a ton cannot be met unless the men, who are under contract, agree to a revision of wages.

South

LOUISVILLE

More Mines Down—General Situation Gloomy—Domestic Market Stagnant—Light Steam Offerings Raise Price.

The trade is about as slow as it has been in years. More mines are closing down, while western Kentucky is meeting stronger competition out of eastern Kentucky, which is paying a lower wage scale.

Jobbers report that there is a good call for screenings and very small production. In fact, there is not much demand, but less production. Lump is not moving, and producers cannot supply contracts. This may start mine run moving.

Industrial demand is showing no improvement, while the retailer has big stocks on hand. Unless some severe weather comes, the retailer may have a large carry-over.

It is hinted that the recent reductions to the 1917 wage scale in eastern Kentucky do not represent the end of the cut, although further reductions may be staved off until after a settlement of the general wage scale in the spring. It looks like eastern Kentucky and West Virginia have about decided to hold their wage scale at under all unionized fields, and go after business from that basis.

At that prices are too low right now for production on a profitable basis. There is distress coal on the market, and some eastern Kentucky block has been offered as low as $2.25.

BIRMINGHAM

Acute Dullness Pervades Trade — Inquiry Weak — Production Shows Decided Falling Off — Additional Mines Close.

There has been no visible market improvement in the past week. What little business that is offered is of spot character and individual orders are for only a few cars for prompt shipment. As a whole the tonnage is small and not of sufficient weight to have any bearing in the trade.

Mild weather continues, hence no betterment can be reported in the domestic market. It is almost as difficult to move as steam. The advent of steady cold weather, which is absolutely essential for the relief of this situation, is of uncertain realization.

Quotations on steam and domestic coal f.o.b. mines are about as follows, although some lower grade coals of inferior quality can be had under these figures. Many such producers have been forced to close down under present stringent market conditions, and the prices given are representative: Carbon Hill mine run, $1.90@$2.25, washed, $2.50@$2.85, lump and nut, $4@$4.25; Cahaba mine run, $2.25@$2.75, washed, $2.50@$3.15, lump and nut, $5@$6; Black Creek mine run, $2.50@$2.75, washed, $2.50@$3, lump and nut, $5@$6; Corona mine run, $2.25@$2.50, washed, $2.75@$3, lump and nut, $4@$5; Pratt mine run, $2.25@$2.50, Montevallo lump and nut, $6@$7.50.

Southwest

KANSAS CITY

Retail Business Dwindles—Stocks Are Heavy—Mine Disturbance Fails to Affect Market—Steam Coals Short.

Unseasonable weather again prevails. Dealers are stocked to the sky, and as the market has dropped they are hard hit. Their large stocks cost them 75c. @$1 per ton more than they would have to pay for the same grades today, and it is to be admitted that their complaint against this condition is well founded. The salesman who now calls on his trade is not received as pleasantly as he would have been if his company had made a fair price in the first place and stuck to it. Springfield district Illinois lump dropped to $2.50 in Kansas City; egg to $2.25 and these are two grades that the dealers had bought heavily.

Wives of the Kansas miners are taking up the fight and state troops are in the field to protect property and the miners who wish to work. Only 10 per cent of the mines working could supply all the domestic grades that are in demand.

Steam grades continue very scarce but there are no material changes in prices.

News From the Coal Fields

Northern Appalachian

CONNELLSVILLE

Stagnant Market Reflects Iron and Steel Conditions—Furnace Oven Production Increases—Little Interest in New Contracts.

The coke market continues stagnant, with no demand for prompt furnace, little call for prompt foundry and only occasional interest in contract prices. The dullness is due simply to stagnation in the iron and steel market and is not attributable to anything like a deadlock between coke seller and buyer. The blast furnaces that use purchased coke are not moving all of their current product and are making very few sales, while some are talking of banking over the holidays.

While there is a considerable volume of furnace coke loaded on track the holders are making no price concessions. They would be glad to receive inquiries but as a rule do not quote prices without inquiries. The nominal asking price is $3. For heating and miscellaneous purposes coke is quoted $2.50@$2.75. Even this market is quite inactive.

In foundry the spot market is particularly quiet after a very moderate run of carload orders last week. Some foundries having contracts that expire Dec. 31 are asking prices for the first quarter but will probably be quoted for January only. Spot furnace is $3; contract furnace, $3.25@$3.40; spot foundry, $3.75@$4.50.

The *Courier* reports production in the week ended Dec. 10 at 56,780 tons by the furnace ovens, an increase of 8,780 tons, and 32,130 tons by the merchant ovens, a decrease of 2,940 tons, a total of 88,910 tons, an increase of 5,840 tons.

PITTSBURGH

Market Remains Stagnant—Improvement Expected in February—Non-Union Competition Ruinous.

There is no material change in the situation. The market continues stagnant, with a little buying of high-grade gas, such as cannot well be secured from other districts. The nearby non-union fields are taking nearly all the steam business. There is scarcely any byproduct market as the ovens that use coal not of their own mining are usually supplied by long-term contracts.

With the decreased demand for Connellsville coke, operators are making more effort than formerly to sell coal and thus the competition is increased rather than lessened.

Operators do not look for any important increase in demand before February, when there may be an increase either on account of increasing industrial operations or from buyers wishing to stock against a possible mining suspension in connection with settlement of the new wage scale.

Gas slack, quoted last week at $1.50 @$1.60, is in slightly better demand, and there are more sales at $1.60 than formerly. Steam slack is $1.30@$1.40 mine run and ordinary gas, $2.10@$2.20; ¾-in., $2.60@$2.70; Pan Handle 1¼-in. domestic, $2.75@$3; high-grade gas mine run, $3.

EASTERN OHIO

Continued Sluggish Demand—More Mines to Close—First of the Year May Check Declining Demands.

The predominating factor during the week ended Dec. 10 was the continuance of a sluggish demand, and the tonnage mined showed a further slight recession. It is not improbable that some additional mines will close down temporarily.

Total production amounted to 294,000 tons or 45.5 per cent of potential capacity. Likewise, the output is on a parity with operations during April, when demand was very dull and before opening of the Lake season. Association mines worked 37 per cent of possible worktime as compared with 41 per cent the preceding week, and produced approximately 44 per cent of capacity.

Cumulative tonnage figures for the calendar year indicate a production of 16,925,000 tons as against potential capacity of 30,442,000 tons, showing that 55.5 per cent of capacity has been mined during the year.

Due to continued mild weather and apparently no increase in the amount of traffic being transported by railroads, if anything, they are curtailing the quantity of fuel being mined for their account.

If the coal trade is any criterion by which industrial activity may be measured, it must be concluded that any changes in the Ohio industrial situation during the week were in the nature of a slackening of activities rather than anything else. Present tendencies in the iron and steel industry are toward a slight decrease in output, with the railroads reporting business duller than it has been for weeks. The slight recuperation has now been overtaken by seasonal dullness, resulting in more or less "marking time" on the part of industry until after the first of the year.

Industrial concerns are putting their houses in order, and are optimistic as to the outlook for business with the new year, and while it is not expected that there will be any extraordinary improvement, it is felt that inquiries and sales will at least take on new life.

Slack remains about the same as reported for last week. The volume available is rather restricted, and the price remains firm at $1.50.

UPPER POTOMAC

Production Increased by Some Mine Resumption on Reduced Scale—Market too Weak to Sustain It.

There was a slight increase in production during the week ended Dec. 10, made possible by the fact that approximately 800 miners have accepted a return to the 1917 wage scale. Where these reductions were in effect the average pay under the new scale was about 80c. a ton for machine-mined coal. There was no assurance, however, that even with reduced production costs, mines would be able to operate steadily.

CENTRAL PENNSYLVANIA

Deplorable Conditions in Union Fields—Sentiment Favors Resumption at Lower Wages.

Mining conditions are anything but encouraging and unemployment is becoming greater throughout the district. Central Pennsylvania lost, during the month of November, 15,768 car loads, or 788,400 tons by reason of being unable to meet competition. In the eleven months of 1921 ending Nov. 30, the field lost a total of 128,872 carloads, or 6,443,600 tons.

In the unionized section there is much suffering among the miners and the demand for relief is so great that the United Mine Workers are unable to cope with the situation and local officials threaten to resign. In some of the districts, notably at Robertsdale, Broad Top and in some sections of Cambria County, the locals threaten to box up their charters and send them to headquarters unless relief comes soon. This would indicate that the miners are ready to go back to work at the reduced scale.

Things are happening with great rapidity in all coal fields east of the Mississippi River and operators venture to predict the collapse of the United Mine Workers in this section before April 1, 1922.

FAIRMONT AND PANHANDLE

Idleness More Pronounced—Inquiries Disappear—Distress Tonnage Heavy.

FAIRMONT

Idleness was more pronounced than ever during the week ended Dec. 10. On an average only about 48 mines out of the 300 were in operation from day to day. Commercial demand was almost at a standstill and little other than railroad fuel was moving. Buyers were not even making inquiries and contract orders alone furnished a production outlet.

NORTHERN PANHANDLE

With loadings limited largely to railroad fuel, production was not over 65,000 tons. What little coal was mined was moving to the West or to Buffalo. Inquiries were scarce and no new contracts were being made.

UNIONTOWN

Byproduct and Beehive Competing for New Contracts—Few Inquiries—Coal Market Sluggish.

The few inquiries out for furnace coke for 1922 requirements indicate that byproduct makers will be sharp competitors with beehive producers. Prices for next year's delivery are not clearly defined. A $3.75 figure for the first three months is heard in some quarters and $3.50 in others.

The spot market is unusually quiet, both for coal and coke. Tonnage moving from market sales is a negligible quantity and in most cases is the result of forced sales. Furnace coke is quoted nominally at $2.75@$3. Foundry is a little better at $3.75@$4.25. All grades of coal are weak, steam being quoted at $1.40@$1.50 and byproduct $1.65@$1.85.

ANTHRACITE

Market Turns Stagnant — Some Companies Curtail Production—Many Independents Closed.

The situation is the most serious that it has been in a number of years. There are practically no orders for coal coming in. The Pennsylvania Coal Co. announced the closing down of ten mines indefinitely, due to lack of orders. The Lehigh Valley Coal Co. has eight collieries closed, due to an outlaw strike.

The Susquehanna Collieries Co. is only operating part time at a number of its mines. Many of the independent collieries have closed down entirely because of the lack of orders.

Middle Appalachian

LOW-VOLATILE FIELDS

New River Output Increases with Reduced Wages — General Markets Unimproved—Contract Cancellations.

NEW RIVER AND THE GULF

If New River production increased somewhat during the week ended Dec. 10, it was because some miners had agreed to accept lower wages and not because of any change in market conditions. The bulk of production was on contract and even these were in process of curtailment. Comparatively little domestic coal was being marketed.

Idleness increased greatly in the Gulf region, more than half of the mines being down, with conditions described as the worst of the year. Producers believe that after Jan. 1 the outlook might warrant them in mining more coal, but for the present they are without a market, one grade being as much of a drug as another.

POCAHONTAS AND TUG RIVER

Pocahontas mines were not producing more than 130,000 tons a week with "no markets" in excess of 220,000 tons. Not only was there no spot business offering, but contract orders had been scaled down to almost nothing. Bunker and coastwise business was scarce and Tidewater shipments were reduced to the minimum.

Tug River production was reduced because of the growing market dullness and did not reach more than 50,000 tons. Spot sales had largely ceased and contracts had been either canceled or curtailed. Shipments to affiliated steel companies continued and most of the coal loaded found its way to Western markets.

HIGH-VOLATILE FIELDS

Pre-Holiday Idleness Dominates — No Market for Spot Coal — Production Drops Further.

KANAWHA

Idleness dominated the situation during the week ended Dec. 10, most of the mines being shut down. Spot demand for either domestic or steam fuels was at the zero mark and inquiries were few. Buyers were able to secure distress coal in sufficient quantities to meet their needs.

LOGAN AND THACKER

Logan production, while increased slightly, was less than 50 per cent of capacity. Little other than contract coal was being moved, although producers were able to ship some tonnage to Detroit and points on the Ohio River. Even the fact that mines were in a position to meet declining prices, failed to attract any new business.

Thacker production dwindled to about 65,000 tons, no market losses reaching 135,000. The spot market was in a comatose condition, sales being out of the question. Mines operated about two days.

NORTHEASTERN KENTUCKY

The downward trend of production continued, the output not being 25 per cent of capacity. General market conditions barred most of the mines from operating, although they were in a position to quote lower prices than organized mines could make.

VIRGINIA

Production was not much under 60 per cent of capacity or about 120,000 tons. Some of this, of course, was utilized in coke making. Virginia mines had a good contract market, comparatively speaking, which enabled operators to go ahead at a time when most plants are shut down.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Production Is Low — Heavy Domestic "No-Bills"—Additional Mine Closings Inevitable.

Very little change is noted in the situation and there seems to be little hope for improvement before the first of January, if then. The few mines that are trying to operate now will probably close soon until after the holidays, as in most cases their sidings are full of prepared coal which can only be moved at sacrifice prices.

Screenings are moving a little better, but even at that, buying is only from hand to mouth. Prices on best 4-in. block are around $3; 2 x 4-in. egg, $2.10 @$2.25; nut and slack, $1@$1.15; mine run, $1.65@$1.80.

Middle West

MIDWEST REVIEW

Market Dullness Continues — Steam Coals More Active with Low Production—Domestic Situation Stagnant.

But little change has taken place in the coal market during the last week. The situation has not grown worse, because such a development would be absolutely impossible. On the other hand, on account of the extremely warm weather no improvement has been noted.

As has been the case for some time, the country trade is marking time. Sales made to the retail trade in the country have been few and far between. What sales were made were done at reduced prices. It is a noticeable fact that the retail trade is looking for a cheap coal and overlooking for the time being, the question of quality and preparation.

One angle of this development may prove advantageous to some Eastern operators. In Iowa, for instance, the only kind of West Virginia and Kentucky coals recently moving out was the 4-in. block or 2-in. lump. Those retail dealers now do not want to pay the price for block and are buying egg at prices ranging $1.75@$2.50, applying it on what few retail Kentucky orders they have on their files. It is to be hoped that this forced introduction of Eastern bituminous egg will bring beneficial results in the long run to Eastern operators who, up to now, have only been able to market their coarse coal in the West.

The industrial situation is extremely stagnant. Steam coals are mounting in price, some sales being reported at $2.25 for best grade southern Illinois screenings, but as usual, this increase in price was brought about by scarcity of steam coal at the mines rather than increased industrial activity. We heard of one instance west of the Mississippi River which will give a very good idea of the industrial Middle West situation. One railroad serving Illinois, Iowa, Missouri and Kansas reports on one division thirty conductors working as brakemen on freight trains at reduced wages in order to keep steady employment and to keep themselves in line for pension. The traffic of this particular railroad has fallen to very low levels and the officials are not in an optimistic frame of mind, as they do not see where an increase is coming from. Current quotations are shown in the Weekly Review.

The old heads in the game are not looking for greater activity in the coal market until after the first of January. When that time comes there will, perhaps, be some improvement. As it is now, the warm weather combined with the holiday season has joined to bring the whole situation practically to a standstill.

Very few difficulties have been reported in the way of labor. Some trouble occurred last week in Kansas where the wives of some of the striking miners attempted to interfere with the operation of several of the mines. State troops were called out and the situation is now well in hand.

WESTERN KENTUCKY

Movement Generally Light—Production Steadily Declining—Hope to Readjust Wage Scale — Non-Union Competition Grows.

Continued mild weather and lack of prepared orders has resulted in retailers being out of the market, except a few of the small ones which are not carrying much stock. There is little fine coal to be had, and operators are supplying most of this on contracts, with the result that the market on screenings is strong.

Operators are coming into price competition with West Virginia and eastern Kentucky coal at this time but have been able to meet it due to lower freight rates. However, they are anxious to secure an adjustment if possible of the present union wage scale.

Eastern Kentucky has cut wages to the 1917 level, and western Kentucky is beginning to feel competition where cheap coal is being shipped on higher-priced western Kentucky orders, where jobbers cannot get screenings.

Operators are running less than two days a week, while many mines are down. Screenings are scarce as a result of the small production of lump, and whereas they were selling for 40c. a few weeks ago they are now quoted $1.25@$1.75. Prices of prepared coal are weakening a trifle.

SOUTHERN ILLINOIS

Continued Warm Weather Has Upset Market Conditions — Domestic Moving Slow—Tendency to Cut Prices—Steam Shows Some Strength.

The Carterville situation continues bad on account of the warm weather. Railroad tonnage has eased off but is about the only thing that keeps some mines working. Lump is heavy and hard to move. Screenings show the best movement, but the demand is not strong enough to justify a higher price.

There is considerable unrest among the miners on account of the idleness preceding a holiday, but in spite of everything that the operator can do to move coal the market will not take it. The present is a forerunner of what is going to happen in normal times with the overproduction that Illinois is capable of.

Somewhat similar conditions prevail in Duquoin and Jackson County. It is the same slow, hard pull, with some down for as long as two weeks at a time.

The Mt. Olive district is doing more in railroad coal than anything else. Domestic movement means about one day a week and there is no steam coal to offer as a rule because it goes on contract.

St. Louis price on Mt. Olive was cut from $3.50 to $3 and this will likely prevail in Chicago, while the country price remains $3.75 for domestic sizes. This has caused some feeling on the part of the dealers who have large quantities stored and it is going to hurt Mt. Olive in the future. The cut was started in order to offset the inroads that Standard coal is making in St. Louis.

In the Standard district things are in a bad way and gradually getting worse. The lump market is shot to pieces and it is going to take a lot of cold weather to bring it back. Railroad demand is fairly good, but the general condition through the field is far from satisfactory to both miner and operator. Some mines have been down now for three weeks without working and others have coal piled up that it will take about three weeks to move, present weather prevailing.

Screenings are about the only thing that seem to move at all without work.

News Items From Field and Trade

ALABAMA

A new enterprise promising much for the Birmingham District has begun operations at Mobile. **The DeBardeleben Coal Co.** is shipping bunker coal to Galveston via ocean-going barges. In return, cargoes of sulphur from Freeport, Tex., for the acid plants of Birmingham are expected to be obtained.

A tour of inspection of the Birmingham district will be made by **D. A. Lyon**, supervisor of the Bureau of Mines. He will be accompanied by **A. C. Fieldner**, who has charge of the byproducts coke division and other parts of the fuel division, and also by **R. G. Davis**, chief of the experimental station established in Minnesota in the ore region.

ALASKA

Coal operations in Alaska under Navy Department direction have not progressed far enough, in the opinion of Admiral R. E. Coontz, chief of naval operations, to permit the drawing of any conclusions at this time. In a report to the Secretary of the Navy, he states, however, that mining operations will have advanced sufficiently by Autumn to enable the Navy to make a definite decision as to the value of this undertaking.

The Alaskan R.R. has invested $342,362 in a coal mining department.

ILLINOIS

The Sangamon County Mining Co. is planning for the installation of new machinery at the Latham mines, recently acquired. The present output will be increased.

Chris Oberheide, of the firm of Oberheide and Son, Chicago retailers, who is now on an eight months' trip around the world, has written Chicago friends, telling them of his pleasant trip. He has visited, or will visit, Cuba, the Panama Canal, Hawaii, Japan, China, the Suez Canal, and various countries of Europe.

The Franklin Coal and Coke Co., with extensive operations in Franklin and Williamson counties, has announced its intention to sink another mine between Mulkeytown and Royalton. The mine will be located on the new branch of the Illinois Central which is to be constructed.

John Pynchon of the Crozier Pocahontas Coal Co., has returned to Chicago from a trip through Indiana and to Cleveland. He declares the coal situation there is as bad as it is in Chicago.

B. R. Yeagley, secretary of the Indiana Retail Coal Merchants' Association, with headquarters in Indianapolis, is in Chicago visiting railroad claim agents. He is seeking to straighten out approximately $10,000 worth of coal claims that have arisen during the last few months.

The Belleville Coal & Mining Co. has increased its capital stock from $100,000 to $180,000.

Doswell Brown, secretary and treasurer of the Kentucky and Tennessee Coal Co. of Nashville called on the Chicago trade recently. He declared he saw no signs of encouragement in the industry, and said that there is a large quantity of coal on track in Tennessee.

INDIANA

More than 500 miners employed in three of the seven mines owned and operated by the **Clinton Coal & Mining Co.** went on strike recently on order of President John Hessler of District No. 11, U. M. W., after the operators had refused to reinstate a pumper, alleged to have been unjustly discharged.

The Riverside Coal Co., of Jackson, Ky., has filed suit in the Federal Court at Indianapolis, asking $5,000 damages from Carl A. Seibel, of the **Dunn Coal Co.**, Fort Wayne, alleging that he refused shipment of 7,000 tons of coal. The suit charges that Seibel contracted for 10,000 tons and after delivery of 3,000 tons refused to accept further shipments when prices broke sharply. The damage asked represents the difference between contract and the present price on 7,000 tons of coal.

Orpheus M. Dickey filed two suits on contract in Terre Haute recently, asking judgment for $500 in each case. **The Woods Coal Co.** of Coal Bluff, was named as defendant in one action, while the other action was against the **Nevins Coal Co.**, also of Coal Bluff. Dickey alleges that the Woods company ordered 2,000 motor ties from him and that the Nevins company ordered 41 poles and 250 railroad ties; and that in each case the company refuses to pay for the material.

To aid the Methodist Episcopal Hospital at Princeton in a campaign to make up its annual deficit, Princeton and Francisco miners have each agreed to give the labor required to dig 1,000 pounds of coal. **The Princeton Coal Mining Co.** and the **Ayshire District Collieries** will give the coal.

KANSAS

Women sympathizers of Howat, brought military control of the coal field several steps closer by continued recent attacks on workers. Attacking two mines of the **Central Coal & Coke Co.**, one mob prevented sixty men at Mine 51 and forty at Mine 48 from going to work.

KENTUCKY

J. M. Dewberry has been appointed general coal and coke agent of the L. & N. R.R., at Louisville, for the entire system, succeeding **E. H. Dulaney**, who has been appointed chairman of the southern freight rate committee, at Atlanta. Dulaney in turn succeeded **C. D. Boyd**, who is now traffic manager for the Southern Appalachian, Hazard and Harlan operators' associations, he serving jointly for the three organizations, which keep up one traffic bureau.

Thieves recently tunnelled a twenty-inch brick wall to enter the office of **Louis Descognets & Co.**, Lexington, coal dealers, blew a safe and took about $900 in cash.

The Cumberland & Manchester R.R., operating a short line in the Knox and Clay county coal fields, has announced contracts placed for $250,000 worth of equipment, including two new 150-ton freight locomotives, a passenger locomotive, thirty steel coal cars, ten wooden cars, and a number of box cars and general equipment.

John C. Lepping, Louisville, has changed the name of the **River & Rail Coal Co.**, to the **Lepping Coal Co.**, (retail) following objections made to the use of this name by the Rail & River Coal Co., Inc., jobbers.

The Aldins Coal Co., Robinson Creek, capital $30,000, has been chartered by T. J. Phillips, Frank Marcum and A. R. Roberts.

The Crawford Coal Corporation, Williamsburg, capital $150,000, has been chartered by Essex P. Blalock, J. B. Bowling and J. H. Bowling.

Clint C. McClarty has affirmed ownership of the **Tri City Coal Co.**, Louisville.

MISSOURI

The Riverside Coal Co., Novinger, Adair County, has been chartered with a capital stock of $20,000.

Geo. J. L. Wulff has been appointed president of the Western Coal & Mining Co. of St. Louis, succeeding **W. P. Hawkins**, deceased. Mr. Wulff was the sales manager for the company at Kansas City, Mo.

The Central Missouri Coal & Mining Co. will develop 600 acres of coal at Holt Summit, and will spend $75,000 to install its plant.

The Bates Coal Mining and Mercantile Co. has opened a new coal mine on the Bellier place, north of Rich Hill, and is now loading shipments for the market.

NEW YORK

Major W. P. Tams, head of the Tams interest in West Virginia, attended a smokeless meeting in New York early in December. **J. C. Sullivan**, who is extensively interested in smokeless operations in southern West Virginia, was also in New York at that time.

One hundred and forty former employees of **Westinghouse, Church, Kerr & Co.** met for supper recently and organized the **"W. C. K. Alumni Association,"** to meet weekly, on Wednesdays, for luncheon between twelve and one o'clock at Zimmerman's Restaurant, 180 Fulton Street, New York City, where alumni are welcome. Secretary, A. H. Tummel, 131 Warwick Street, Brooklyn, N. Y.

The object of the Association is the maintenance of the friendships formed by the members during many years of service with Westinghouse, Church, Kerr & Company. The periods of this service run anywhere from three years to twenty-five years.

Robert T. Hasler, of Hasler & Co., Norfolk, was in New York recently, in conference with officials of his office there.

The Archdeacon-Saks Coal Co. has opened an office at 817 White Bldg., Buffalo, and will act as sales agents of the **Braddock Coal Co.**, of Cumberland, Md., besides doing a general jobbing business.

New York City office of the **Blaw-Knox Co.** has been moved to the Carbide & Carbon Bldg., 30 East 42nd St.

OHIO

The Pittsburgh-Ohio Coal Co., recently organized, is arranging for the early operation of property acquired in Jefferson County, consisting of over 200 acres of coal lands. Machinery for mining by stripping will be installed. A. F. Smith is president.

Cliff Randall, who has been in charge of the Detroit office of the Main Island Creek Co., is now associated with the Island Creek Coal Sales Co. and will continue to be located in Detroit. This announcement was made from the Cincinnati offices.

R. A. Colter, of the C. G. Balke Co. spent a week in the East, most of which was with New York affiliations getting a first hand view of the export situation.

Frank B. Stewart, president of the Winifrede Coal Co., returned to the head offices in Cincinnati after several days of conference with the directors at their headquarters in Philadelphia.

Changes effected by the consolidation of the **Fort Dearborn Coal Co., the Yukon Coal Co. and the Wood-Morton Fuel Co.** in Cincinnati will mean the closing of the latter company's offices and the return of **A. L. Bobbit** to Charleston and the sales direction of the new corporation for this territory being placed in the hands of **R. H. Boykin**, who has had charge of the Ft. Dearborn's offices.

The Island Creek Coal Sales Co.'s Cincinnati office, which has been located in the Union Central Bldg. for a number of years will be moved to the Dixie Terminal Bldg.

The American Inland & Export Coal Co., has changed its location from the thirteenth to the fourteenth floor of the Union Trust Bldg., Cincinnati.

Pittsburgh interests have purchased the holdings of the **Williams Coal Co.**, Steubenville, for $66,000, according to an announcement by George W. Borden, receiver for the company.

The Roth Coal Co., which has maintained an office in the First National Bank Bldg., Cincinnati, has closed it and its affairs are now directed from the offices of **Jewett Bigelow & Brooks.**

The Western Fuel Co., has moved from the tower of the Union Central Bldg., Cincinnati, to the ninth floor of the same.

PENNSYLVANIA

Charles H. Dorrance, who has been acting for several years as vice president and general manager of the Hudson Co., will, in the future, devote all of his time to the duties of vice president, according to an announcement issued today by the company. He is succeeded as general manager by **R. H. Buchanan** of Scranton who, since last July, has been assistant to the general manager. **Charles W. Wagner** has become superintendent of explosives.

H. D. Kynor, of Scranton, formerly of Pottsville, has been appointed assistant general manager, succeeding Buchanan. **R. Y. Williams**, of Scranton, who has been acting as general superintendent of the Lackawanna district, has also secured a position as assistant general manager.

The Madiera Hill Co. is planning a new railroad siding, new breaker yards and water lines at its Natalie and Hickory Swamp collieries, near Pottsville.

The S. Flory Manufacturing Co. has recently secured an order from the **Hudson Coal Co.**, Scranton, for seven hoists equipped with the Flory improved band friction.

The Reitz Coal Co., Philadelphia, has filed notice at the office of the Secretary of the Commonwealth, Harrisburg, of an increase in capital stock from $500,000 to $1,000,000; John Lochrie, president.

The Goshen Coal Co., Clearfield County, has filed notice of an increase in indebtedness from nothing to $100,000; H. B. Hartswick, treasurer.

The Fairfield Coal & Coke Co. has filed notice of an increase of indebtedness from $500,000 to $750,000; I. L. Hammond, Westmoreland County, treasurer.

Announcement has been made that the **Clairton Coke Co.** will build six additional batteries of byproduct coke ovens at Clairton.

The Dauphin County Commissioners will not make any increases during the present triennial assessment of the coal lands in the northern part of Dauphin County. Anthracite holdings there were increased materially three years ago. The increased assessments made in 1918 have not been recognized by the **Philadelphia and Reading Coal and Iron Co.** The company has appealed from the assessment and the tax collectors have returned the company's property to be sold by the County Treasurer for taxes. For three years the company has been paying the county taxes on what it says is due.

The Clymer Coal Co., Commodore, has been chartered with a capital stock of $10,000, David J. Thomas, Clymer, treasurer. The incorporators are: Lloyd H. Guelick, Clearfield; William T. Thomas, Clymer, and David J. Thomas, Clymer.

The Roman Coal Co., Greensburg, capital, $25,000; treasurer, Pietro Angeline, Bradenville, has been organized. The purpose of the company is the mining of coal and the manufacture of coke. The incorporators are: Anthony De May, Greensburg; Pietro Angeline and Ernesto Pagliaricci, Bradenville.

The Fuel Service Co. has notified the office of the Secretary of the Commonwealth of an increase in its capital stock from $50,000 to $100,000. A Markle, Jr., is treasurer, Luzerne County.

The Nay Aug Coal Co. has increased its indebtedness from nothing to $750,000; David Boies, president, Lackawanna County.

The Lindsay Coal Mining Co. has increased its indebtedness from nothing to $80,000; A. L. Light, Jefferson County, treasurer.

The award of compensation in the case of Mrs. Hannah M. Morgan against the **Philadelphia and Reading Coal and Iron Co.**, an appeal carried to the Schuylkill County Court, is affirmed and judgment has been entered in favor of the claimant for $3,303.

UTAH

The Department of the Interior has issued to date five coal mining leases and four prospecting permits for this state, according to H. I. Smith, acting mining supervisor for the Bureau of Mines with headquarters in Denver. Mr. Smith is on an inspection trip in Utah coal fields.

Fear is expressed lest the fire which originated a short time ago along the outcropping of a valuable coal vein on the government land in Garfield County should have become uncontrollable. Only meager reports have been received in Salt Lake City so far, but it is known that the burning area has spread into a tunnel. Two government engineers have reached the spot and a plan for fighting the fire is being rapidly organized.

VIRGINIA

Under a **readjustment of trimming rates** on coal loaded at Hampton Roads piers, charges on vessels of the self-trimming type are reduced by approximately 18 per cent. Rates on other classes of vessels are lowered to a more limited extent, except in one instance, where the new tariffs call for an advance of 1 cent a ton on trimming. Lower rates were effected as a result of conferences between the Hampton Roads Maritime Exchange and the representatives of the Norfolk & Western, Virginian and Chesapeake & Ohio railroads. Coal shippers are non-committal on the rates, the belief being that if they are demonstrated to be unsatisfactory, protests will be lodged with the Interstate Commerce Commission asking for further reductions.

The Norfolk office of the **Central Pocahontas Coal Co.**, scheduled to have been closed Dec. 10, will remain open.

WASHINGTON, D. C.

Among a long list of **claims pending before the Shipping Board**, according to a report to Congress, are the following coal claims: American Shipping & Fuel Co., $107,842; Berwind White Coal Mining Co., $26,500; Clearfield County Coal Co., $2,922; Coal & Oil Corporation, $824; Commercial Coal Co., $762; B. J. Lynch Coal Co., $7,000; Lake & Coal Export Corporation, $10,864; New Orleans Coal Co., $2,500; United Coal Co., Rotterdam, $5,957; United Coal Companies, $391,610; Virginia Iron & Coal Co., $26,680.

Plans for organization of coal mine chapters of the **Joseph A. Holmes Safety Association** were considered at a recent meeting at the Bureau of Mines at which were present in addition to representatives of the Bureau of Mines and the American Mining Congress, J. W. Reed, director of safety of the Consolidation Coal Co. and a representative of the United Mine Workers, W. J. James. Another meeting will be held in January and it is expected the organization will be put in motion in March.

Among coal estimates submitted to Congress by the various departments of the government are the following: **Panama Canal**, anthracite, $4,005; bituminous, $190,995; **coast guard**, $993,200; **coal for public buildings**, $1,235,000; **Bureau of Mines**, for testing fuel, $136,000 a decrease of $6,510; **naval coal depots**, $306,000, a reduction of $291,000.

Appropriations totaling $1,632,560 have been submitted to Congress to cover the expense of work planned for the next fiscal year at the Bureau of Standards. One of the items making up this total is mine scales investigation, $15,000.

The Internal Revenue Bureau announces in connection with the appointment of a committee representing the public and the government to simplify tax forms and regulations under the new revenue law that initial consideration to changes in the matter of regulations and forms covering the coal industry will be had by the subdivision of the Bureau on Natural Resources.

WEST VIRGINIA

Kanawha County coal men have organized the **Eclipse Coal Co.**, the new concern being capitalized at $50,000. General offices of the company, for the time being, will be maintained at Charleston. Active in organizing this company were: J. B. Vaughan Logan; O. J. Cox, E. M. Cox, Fred Nicholson, of Charleston, and S. A. Lewis, of Cabin Creek.

Michigan men are behind a movement for the further development of Logan County territory, having organized the **Logan Island Creek Coal Co.**, which will operate near Critas in Logan County, that place to be the headquarters of the new corporation which has a capital stock of $200,000. Identified with this company are: Charles Coryell, Charles A. Coryell, George MacPhail, R. F. MacPhail, all of Bay City, Michigan; W. R. Lilly, Logan, W. Va.

Representative Goodykoontz, in a House speech urging the creation of an additional judgeship in the Southern District of West Virginia, in which, however, he failed, said it was to relieve the crowded docket due to increased litigation over coal land titles due to new industries coming into the state from all over the country in order to locate near the base of a supply of coal and other fuel. High freight rates on coal are forcing manufacturers to establish their plants close to a supply of fuel and this rapid development has increased the business of the courts.

The American Coal & Coke Co. has been incorporated with a capital stock of $100,000. Incorporators are Edward A. Byrne, F. E. Peabody, J. J. O'Connell, Charles M. Rhoad, John C. Bierer, Pittsburgh.

A recent visitor in the Fairmont field was **M. L. Hudson**, treasurer of the Edward Hines interests of Chicago. After spending a day or so in that field he left for New Orleans.

J. W. Bischoff, general superintendent of the West Virginia Coal & Coke Co., with headquarters at Elkins, and also president of the West Virginia Mining Institute, was in Charleston recently, attending a meeting of the institute.

Alex Laing, general manager of the MacAlpin Coal Co. is back at his office again after a trip through California and Texas, having visited the Mexia oil fields of Texas during his western trip.

H. P. Brydon & Bros., of Piedmont, W. Va., were awarded $12,500 damages in their breach of contract suit against the **Reliance Coal & Coke Co.**, of Cincinnati in a hearing at Cincinnati. The suit grew out of the failure of the Baltimore Mfg. Co., of Baltimore, Md., to take coal which it had contracted for.

R. B. Isner, who recently became connected with the Old Dominion Coal Corporation of Charleston spent a few days in Elkins recently. Mr. Isner was formerly located at Elkins where he was the sales manager of the West Virginia Coal & Coke Co.

After some delay and several legal tangles the sale of $325,000 worth of the Morgantown & Wheeling Ry. for $162,500 to **Samuel Purseglove** of Cleveland was recently consummated. The bonds were owned by Clay and Morgan districts of Monongalia County and were issued for the purpose of helping to build the road, which has been in the hands of a receiver for some time. A number of improvements are contemplated in the Scott's Run section in order to facilitate the handling of coal. A scale is to be built near Maidsville and a "Y" at the mouth of Scott's Run.

It is probable the reports of the Senate Committee on Labor on its recent investigation of the West Virginia coal strike will be delayed several weeks. Pressure of other legislation has prevented the committee from giving much attention to the report, and the committee is now taking up the proposed department of welfare. The delay is also occasioned by the desire of the committee to endeavor to present to the Senate a comprehensive report containing recommendations which would seek to alleviate disputes in all industrial fields.

Following a visit paid to the Western offices of the Central Pocahontas Coal Co. in Cincinnati by **Vice-President W. J. O'Toole**, of Welch, W. Va., the following changes in the sales personnel were announced. **George Loeb**, who has been in charge of the Norfolk office, to the Cincinnati office and **Frank Wright**, who has been in the New York office, to the Michigan territory.

The opening of Mine No. 7 of the **Babcock Coal & Coke Co.** in connection with the development of the lease of this company on the Nuttall land at Cliff Top, in Fayette County, signalizes the beginning of general development work on the part of this company. The mines have been closed down for several months and in the interim the company has been at work getting the new mine in shape to open. The new mine is to be equipped with electrical apparatus both inside and out. Because of the topography of the land, it was necessary to build an elevator from the mine mouth to the storage bin.

The Raleigh-Wyoming Coal Co. is engaged in constructing a large coal plant at Glen Rogers, in Wyoming County. An up-to-date shale-making brick plant has been added.

W. D. Reed, of the Fairmont & Masontown Coal Co. has returned from a business trip to Washington.

James H. Henshaw of Fairchance and Robert W. Henshaw of Uniontown are among the incorporators of the **Fielder Coal & Coke Co.**, with offices at Morgantown.

The Glad Creek Coal and Lumber Co., a $1,000,000 concern just incorporated, has arranged to develop coal and timber on a large scale in the Shady Spring district of Raleigh County. The chief members of the company are E. A. Simmons and D. S. Twehig, of Charleston; B. D. Lacy and Mrs. B. D. Lacy, of Clothier, and S. W. Rickey, of Cincinnati, Ohio.

BRITISH COLUMBIA

At a meeting of the district branch of the **Canadian Institute of Mining & Metallurgy**, held recently at Cumberland, B. C., addresses were delivered by J. D. McKenzie, chief geologist of the Western division of the Dominion Geological Survey, on coal formation; by Col. J. E. Leckie, chairman of the Western division of the institute, on the aims and objects of the institute; and by Nichol Thompson, chairman of the mining bureau of the Vancouver Board of Trade, on the mining industry.

Traffic News

The Interstate Commerce Commission has ordered suspended **Supplement 11, to the Missouri-Pacific Tariff, I. C. C., No. A-4891**, following petition filed by J. Van Norman, Louisville attorney, representing the western Kentucky operators. This supplement was to become effective Dec. 5, but the I. C. C. sustained the application and ordered that effective date of order be postponed until April 4, 1922, pending hearing and further order of the commission. The supplement published reductions ranging from 10½c. to 91½c. on coal from Missouri-Pacific, southern Illinois mines to points in Louisiana, Arkansas and Texas. In some instances, this would create for western Kentucky a disadvantage of 54c. per ton as against a present advantage of 8c.

The I. C. C. has suspended until April 4 proposed reductions in rates on bituminous coal from mines on the M. P. R.R. in southern Illinois to points in Arkansas, Louisiana and Texas.

John Hawkins & Sons, of Nutley, N. J., allege unreasonable demurrage charges on coal shipments which could not be unloaded because of their frozen condition.

In the complaint of the **Consolidated Coal Co.** of St. Louis, the commission decides that the rate on fine coal from Mount Olive and Staunton, Ill., to Kansas City, Mo., is not unreasonable.

The Interstate Commerce Commission has suspended until April 8 the proposed reduction of 5c. per ton on coal from Alabama mines to Gulf ports when for bunkerage, for export or when for points in Florida and Texas accessible by water, but an increase of 20 cents a ton when handled through tipple for other purposes.

The Utah Ry. Co. is to take over the line of the **Utah Terminal Ry.**, according to a notice filed with the Interstate Commerce Commission. The former was recently refused permission to operate as an interstate line. It is situated in the coal fields in the Spring Canyon district, owned by a group of operators.

The I. C. C. has suspended from Dec. 5, 1921, until April 4, 1922, the operation of certain schedules which proposed reductions in the rates on coal from mines in the Rock Springs and Cumberland districts in Wyoming to points in Utah south of Ogden, Utah, on the lines of the Southern Pacific, Oregon Short Line, Denver & Rio Grande Western, Los Angeles & Salt Lake, and other lines.

The Northwestern Traffic and Service Bureau is complaining against unreasonable rates on soft coal from Alger, Wyo., to Grand Junction, Ia.

Application of the **Peerless Coal Co.** for rehearing of its case in which the Illinois Public Utilities Commission recently decided rates on coal from various points on the Springfield Terminal Ry. to interstate destinations were not unreasonable, has been denied by the commission. The rehearing was requested on th ground that the Springfield group rates are higher than those in Ohio, Pennsylvania and Indiana.

Before the Interstate Commerce Commission the **Illinois Terminal R.R. Co.** has replied to the brief of respondents, saying that the objectors to the proposed extension desire to prevent competition between the **Donk Bros. Coal & Coke Co.**, and the coal companies in and around O'Fallon.

The Wm. L. Dee Clay Mfg. Co., of Mecca, Ind., has filed a protest against the abandonment of the Chicago and Indiana Coal Ry. Division of the Chicago & Eastern Illinois R.R., saying operation of the line is essential, particularly the twenty miles from Mecca to West Melcher.

Obituary

Charles B. Kinne, for 30 years a member of the coal trade of Buffalo, died recently. He was always a prominent figure in the bituminous trade and conducted a business in his own name. As president of the Northeastern Coal Co., he was at one time coal purchasing agent of a great part of the tannery interests of the country.

Harrie E. Everett, aged 53, Chicago retail coal dealer, died recently, after a two weeks' illness. He was connected with W. Everett & Son, and was well known in the retail coal trade of the city.

James H. Price, aged 67, secretary-treasurer of the Washington Coal and Coke Co. of Fayette County, Pa., died at his home in Dawson recently. Heart disease was the cause of death. Mr. Price was formerly an official of the Pittsburgh-Buffalo Coal Co. and the American Steel and Wire Co., Pittsburgh.

Association Activities

Southwest Virginia Coal Operators' Association

At the last meeting of the association, it was decided to secure the services of a traffic manager and plans are on foot to have whoever may be retained begin his services about the first of the year. The November meeting was largely attended and a number of questions affecting the industry in Virginia were given consideration.

The association has sponsored a school of instruction for mine foremen conducted under the supervision of R. V. Long, Director for vocational training of the Virginia State Board of Education and J. C. Wright of the federal vocational board. So thoroughly have some operators become impressed with the value of such instruction to foremen that they have committed themselves to a continuance of the program. One producer has secured the services of a member of the federal board of vocational education to spend four weeks at his plant and another member of the association proposes to employ a director of vocational training at his plant. The hope has been expressed that a field director may ultimately be secured.

St. Louis Retail Coal Merchants' Correct Weight and Inspection Bureau

The newly organized bureau, consisting of thirty-five retail dealers, has elected the following officers: President, F. L. Keightley; vice-president, Charles Lehr; secretary, W. J. Hooper; treasurer, John Kessin; commissioner, E. J. Wallace. The bureau was organized principally to have corrected certain ordinances in St. Louis which are the cause of unfair restrictions against the coal trade, and it is their intention to put on inspectors to see that the public is protected against short weights and substitutions.

Northwestern West Virginia Coal Operators' Association

At a meeting of the advisory board of the association, held late in November at Clarksburg, a policy was adopted to be pursued at the joint board meeting of operators and miners held to deal with the Francois Coal Co. case. Representing the operators were A. Lisle White, Everett Drennen and C. H. Tarleton, members of the advisory board, together with E. S. McCullough; the miners were represented by Nick Aiello, president, Patrick Buckley, vice-president and Edward Matthews, secretary of Subdistrict 4, together with Frank McCartney, district board member. Operators are becoming impatient because of the large number of trivial strikes in northern West Virginia during recent months.

St. Louis Coal Service Bureau

At a recent meeting of the bureau, new officers elected for the coming year were: President, L. P. Coan; vice-president, W. H. Riester; secretary, M. J. Reinagel. Executive committee: W. T. Hegwein, W. F. Heinecke, W. A. Schroeter, C. R. Watkins and W. H. Boehmer.

This organization consists of about twenty of the largest dealers in St. Louis.

Coming Meetings

The American Institute of Consulting Engineers, Inc., will hold its annual meeting Jan. 16, 1922, at the Engineers' Club, 32 West 40th St., New York City, Secretary F. A. Molitor, 35 Nassau St., New York City.

New England Wholesale Coal Association will hold its annual meeting Jan. 10, 1922, at Boston, Mass. Secretary, R. S. Townsend, 27 Kilby St., Boston, Mass.

Southern Appalachian Coal Operators' Association will hold its next meeting Jan. 27, 1922, at Knoxville, Tenn. Secretary, J. E. McCoy, Knoxville, Tenn.

Pike County Coal Operators will hold their annual meeting Jan. 6, 1922, at Pikeville, Ky. Secretary, F. E. Miller, Pikeville, Ky.